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and Cellulose Industries

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PRINCIPAL OFFICES—370 Lexington Ave., New York 17, N. Y. (120 E. 41st), Murray Hill 3-9295 (M. F. Bosworth, Business Representative; Virginia Meenagh, Readers and Adv. Service); 305 Baronne St., New Orleans 12, La., Phone—Magnolia 4808; 675 W. Hastings St., Vancouver, B. C., Phone—Marine 1520. Publishing Office—71 Columbia St., Seattle 4, Wash. Phone—Main 1626.

OTHER OFFICES—Louis Blackerby, 534 S. W. 3rd Av., Portland 4, Ore.; Tel. Be. 6348—Stuart Leets, 121 2nd St., San Francisco 5, Calif.; Tel. Ga. 1-5887—Arthur Ponsford, 124 W. 4th St., Los Angeles 13, Calif., Tel. Mu. 8194.

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"The Cellulose Age"

EDITORIALS

Congratulations to International Paper Co.

Happy birthday to International Paper Company which celebrated its golden anniversary at many operations from Three Rivers to Los Angeles and from Cullendale, Ark., to Georgetown, S. C., as this issue went to press.

"Open houses", which have proved so effective in industrial public relations in recent years, have been held in all of the communities in which each of its many plants are located.

This company has met great emergencies with wisdom and foresight in its 50 years of operation. Its operations today are so widely diversified and becoming so thoroughly integrated from tree to finished products, that it can look with assurance to at least another 50 years of prosperity for its stockholders and thousands of employees.

Management-Labor Unselfishness

A splendid example of how management and labor can get together effectively in a matter involving broad community interest has been presented by the employees and the management of Minnesota & Ontario Paper Co.

A legal controversy has surrounded the disposition of a Sick Benefit Fund, formerly maintained for M & O employees, for several years. In early days of the company, employees of several departments and subsidiaries had contributed payroll deductions each month for sick benefits. In 1925, the fund was consolidated with International Lumber Co., as trustee, but in 1941 that company dissolved and the parent firm, M & O Paper Co., took over the administration. Payroll deductions stopped in 1941, but benefit disbursements continued until it became inoperative in 1945.

Legal difficulties began when two former employees sued for recovery of contributions, and a counter suit was started and won by another group of employees who wanted a trusteeship renewed. A complicating factor was the difficulty of locating many thousands of former contributors.

Finally, this year attorneys of management and employees got together and proposed that the residue of the fund, about \$60,000, be contributed to a new Health Center which was being opened in June at International Falls, Minn., site of the principal M & O mills and in close access to company operations.

We would like to call attention to the comment of Judge D. H. Fullerton in Brainerd, Minn., in upholding this agreement which he said was "the finest example of the 'bigness' of men that I have ever heard in a courtroom."

He praised the employees for their "unselfish, humane and generous act" and also praised Minnesota & Ontario Paper Co. for its cooperation.

Of the company's contribution, Judge Fullerton said:

"They not only have joined the men in this effort to make the gift possible, but they have stipulated that the company pay into

the trust fund, which makes the gift possible, the full amount of the obligation that could in any view of the facts, be considered the legal obligation of the company. The company could legally do no more.

"In these troubled days, when both labor and management often are criticized as possessing no motive other than greed and self-interest, it is refreshing to see an actual demonstration that proves a motive by each party founded on unselfishness and good will toward all members of the community."

The judge evidently felt the case was so unusual that it was entirely in order for him to mention a "cooperative precedent" rather than the usual legal references.

"Everybody Wants in on the Act"

On this page last month we stated that a law firm representing certain Indian tribal groups, spurred on by the Interior Department, which for many years has tried to wrest control of Alaska forests from the Agriculture Department (Forest Service), had the effrontery to write a threatening letter to an executive of a group which wanted to build a pulp mill in Alaska. The letter "warned" the executive that he would have to deal with the Indians, rather than the Forest Service, if he wanted use of Alaskan timber resources.

We made an error in that statement.

The true facts are that this law firm has sent not just one letter to one executive of one group wanting to build an industry which could give permanent employment and good wages to many Indians in Alaska. It sent the "warning" to two different executives of two different private groups which wanted to invest in two different mills in Alaska. There are actually several reasons, now, why a newsprint or pulp mill is not being built in Alaska, but if there had been any chance for one these letters killed it.

It is interesting that many of the large newspapers of the United States, which were so hopeful and anxious for some one to invest money in Alaskan timber, devoted columns to the propaganda of the Indian lobbyists, which only served to frighten off any possible investors, but these same newspapers failed to report these threatening letters. They were published in Alaska papers, however, but were not transmitted to the public in the United States.

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Research In Kalamazoo

NEW COATING PROCESS BEING STUDIED

Because Time, Inc., now uses a quarter of a million tons of coated paper annually, it is vitally interesting in paper and printing improvements and savings. Therefore, the work of its Graphic Arts Laboratory in Kalamazoo, Mich., across Alcott street from the St. Regis mills, impinges in many ways upon the entire papermaking industry.

N. L. Wallace, assistant vice president of Time, Inc., and resident representative in Kalamazoo, explained in an interview that the laboratory program is directed on three lines of research—finding means of strengthening paper while retaining the high quality Time, Inc., demands; developing better methods of reclaiming fibers from waste material, and finding new sources of fiber for paper making.

A process for defibering and deinking waste paper, which the laboratory officials describe as cheaper and superior to older methods, was developed here and is now being introduced in a number of plants.

An entirely new process for coating paper, still in the experimental stage, using a synthetic product, is being developed at the laboratory, it was stated.

Paul Thoma and C. Robert Erickson are consultants in direct charge of the research.

The laboratory experts have examined the whole field of testing instruments used in checking the various qualities of paper and printing and have extended it with several instruments of their own design. In the coated paper field one new instrument, widely welcomed, helps test the printability of paper from samples with amazing accuracy. The value of such a wholly dependable test to large users of coated paper such as Time, Inc., is incalculable. This is a line in which Mr. Thoma has done a great deal of work.

New Clay Dispersion Method

One of the developments that have come out of the laboratory is a method of clay dispersion that has resulted in clay being shipped in tank cars in slurry form instead of the bulky, dust-creating dry form mills have been accustomed to for years. Ball mills were used to try to re-disperse the clay after drying at the mines and with the use of much labor and expenditure of power the coating fluids were then made.

By this new process clay dispersion is accomplished at many of the clay producers' processing plants. A better and more uniform dispersion is obtained after which the slurry is pumped into tank cars for shipment. At the coating mills the slurry is taken from the cars to storage or mixed directly with the binder for



N. L. WALLACE, Assistant Vice Pres. of Time, Inc., and Resident Representative of that company at the Graphic Arts Laboratory in Kalamazoo. "We are interested in every phase of paper making and printing," he said. "Efforts of the laboratory are directed toward . . . improved imprint on better paper at higher speeds and lower cost."



PAUL J. THOMA (left) and C. ROBERT ERICKSON (right), consultants for Time, Inc., at Kalamazoo, Mich. Mr. Thoma is chiefly interested in ink, paper and printing development and manages the coating plant near the laboratory. Mr. Erickson deals mainly with the chemical phases of the research at the lab. They have long been associated; formerly were partner-owners of Michigan Research Laboratories.

coatings. The ball mill operation is eliminated.

Ink Drying Experiments

"One continuing study," Mr. Thoma said, "is that being done in high speed printing inks to try to produce higher quality ink for color printing. That work naturally leads to a study of ink formulation and to a test checking of per-

formance under controlled conditions and in actual runs.

"We're trying to find an ink that will dry at a lower temperature," Mr. Thoma continued. "While the speed of the presses which run off the four magazines of Time, Inc., is high, even the one tenth of a second the paper is in the dryer at the high temperature maintained creates a problem. If we can find an ink that will set at a lower temperature, we'll really have something worth while."

The lab work is also directed toward paper research "to try to develop methods that will remove evils inherent in the production of a sheet of paper of today's standards. "In that line of study," he said, "the action of physical stresses on paper in printing presses offers a wide field. There we're hunting for means of overcoming the handicaps we meet or if that proves impossible, to develop papers that will stand the stresses."

This institution is really a series of laboratories. One is concerned with internal sizing and formation of paper.

In a dispersion lab, methods of coating with clay and other pigments are under constant investigation by technical men. Here different types of binders, such as starches and a long list of synthetic materials being considered as substitutes, are examined.

Still another laboratory is the press room. Here the technical men have a 17-inch web, high speed letter press on which to make their test runs and to try out theories in paper, ink and press operations. This fascinating replica of the big presses in Chicago provides an approximate duplication of conditions met in the commercial machines.

It is capable of running at 2,000 feet per minute, double the speed of the commercial presses. It has a full length heat-set chamber so that stock obtained from the company's many suppliers can be given test runs. The margin of speed gives it a range that makes endurance tests of papers possible and which likewise is valuable for checking performances of inks for both impression and drying qualities.

An Appleton test calender stack is also a part of the equipment in the press laboratory. Closely linked to the press laboratory are the two where inks are studied. Resins and varnishes are made in these tile-lined, spotless quarters, testing the myriad formulae available and trying new combinations. Dye-stuff and pigments are also given expert scrutiny under carefully controlled conditions with a view to improving impression, speed drying and perhaps discover an ink that will set without the high temperature that is so dangerous a factor in high-

speed coated paper printing.

"This laboratory," Mr. Erickson explained as he led the way into a darkened room, "is the one that gives us pictures of exactly how different pictures take the ink. It is our microphotographic lab. Here we photograph portions of print and enlarge them up to 600 diameters."

In the general organic research laboratory test tube and beaker work is done on hundreds of projects covering the whole field of making, coating and printing paper.

Still another field now receiving research attention is offset printing where the use of heat-set inks is being investigated.

"This isn't Time's only laboratory," Mr. Wallace pointed out. "Work here is integrated with that being done at the Springdale, Conn., laboratory. Consultants there work on press design, mechanical research such as coaters and folders and allied printing developments."

Plate-making study has resulted there in development of a bi-metallic offset plate in which chrome surface has almost eliminated the oxidation evil. Thus thousands more impressions are obtainable than can be gotten from a plate made in the customary manner.

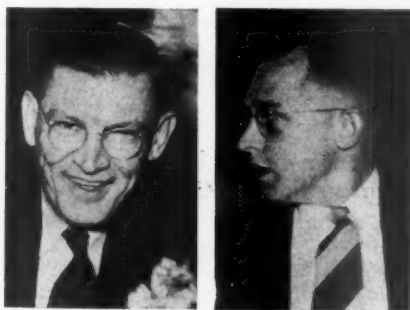
There are 16 persons on the lab staff at Kalamazoo.

Three Paper Machines To Shut Down in Philadelphia

The Mead Corp. announces paper manufacturing in its Dill & Collins Division, Philadelphia, will be discontinued early in August. Three paper machines are to be dismantled and manufacture of raw stock and uncoated grades will be transferred to other Mead mills.

However, the coating mill will remain in operation and its output will be increased under direction of J. D. Davis, general manager.

The corporation said the shutdown was dictated by economic necessity.



ANTON P. SIEBERS (left), who has retired as Paper Mill Superintendent of Longview Fibre Co., Longview, Wash., after being hospitalized because of illness last month. Mr. Siebers will continue as a Consultant to the company, according to R. S. WERTHEIMER, Vice President and Resident Mgr. WILLIAM CLARKE (right), former Assistant Paper Mill Superintendent has been promoted to the Superintendency which Mr. Siebers vacates.

Mr. Siebers was born in Kaukauna, Wis., and belongs to a family which has been prominent in the Fox River Valley industry for many years. He was formerly in the service of Thilmany Pulp & Paper Co., where his brother and relatives are now employed. He went west in 1928 to be Supt. of No. 2 machine at the newly-built Longview Fibre Co. mill.



THE FIBER LABORATORY in the Graphic Arts Research Laboratory, built in 1946 Kalamazoo, Mich., by Time, Inc., giant of magazine publishing industry which is using 250,000 tons of coated paper made by several paper companies from coast to coast in 1948. This shows the de-fibering and de-inking apparatus used in experimental work at the laboratory.

COATING CONVENTION At Grand Rapids Mich., in 1949

TAPPI has scheduled a National Coating Convention to be held at Grand Rapids, Mich., April 26 to 28, 1949.

It will be the biggest meeting of the kind in history. More than 500 are expected to attend this three-day affair.

Early this year, a similar coating meeting was held at Kalamazoo, Mich., with the Michigan Superintendents Division as sponsors. Mechanical and technical

features of coating operations were discussed in a one-night meeting, with Olin W. Callighan of Edgar Bros. as toastmaster.

But at next year's meeting, the Kalamazoo Valley section of TAPPI will have charge. It will be a much more elaborate affair. It was decided to hold it at Grand Rapids because there are not ample hotel facilities at Kalamazoo.

COMING INDUSTRY MEETINGS

Sports and Field Day, Michigan
Supts.—Gull Lake Country Club,
Kalamazoo, Mich. July 20

TAPPI Plastics Conference—
Institute of Paper Chemistry, Appleton, Wis. Aug. 16-17

First Western Packaging Exposition—Civic Auditorium, San Francisco Aug. 10-13

TAPPI Fundamental Research—
On "Physical Constituents of Wood," Madison, Wis. Aug. 18-20

Technical Section Canadian Assn.—
Harrison Hot Springs, B. C. Sept. 8-9-10

Northeastern Wood Utilization Council—Boston Sept. 17

TAPPI (U. S.) and Canadian Tech. Section, Mechanical Pulp—Poland Springs, Maine Oct. 11-13

TAPPI Testing Conference—
Mellon Institute, Pittsburgh, Pa. Oct. 11-13

Southern and Southeastern Supts. Divisions Joint Meeting—Atlanta Biltmore Hotel, Atlanta, Ga. Oct. 21-23

TAPPI Engineering Conference—
Buffalo, N. Y. Oct. 25-28

National Paper Trade Assn.—
Hotel Stevens, Chicago. Oct. 28-30

Forest Products Research Society, Pacific Northwest Section—Hotel Vancouver, Vancouver, B. C. Nov. 8-9

Paper Industry Salesmen—
Midston House, New York City—
Every Monday, 12 noon to 2 p.m.

Allied Industries Luncheon Club—
Second Monday of month, 12 noon,
Commodore Hotel, New York.

This is NOT a Mill in Venice!



THESE PICTURES WERE TAKEN at Columbia River Paper Mills, Vancouver, Wash. (140 tons a day pulp and paper mill). Air view below shows extent of flood waters, which may remain high several weeks. The upper quiet scene of water-stilled No. 3 machine room hides a story of foresight and planning. Engineer Tom Parks reports that before flood water engulfed the plant, paper machines were encased, every motor in the mill was removed or jacked up, platforms were built to hold chemicals, main substation was sandbagged and emergency lighting sets strung up. Eighty-five percent of the mill is underwater; another one-half inch would completely surround and submerge the plant. Mill Superintendent Edge N. Wennberg, back to camera, with Orville Charles, assistant master mechanic, are shown paddling through mill in rubber boat. Fishing would be a good—a 3½-foot sturgeon was trapped in the machine room with numerous carp. Joe Riley, assistant engineer, rescued an exhausted beaver from the railroad track. Water rose one foot higher than is shown in above shot. No. 1 and No. 2 machines also were flooded.

Columbia River Flood Damages Several Mills

Severe flood conditions on the Columbia River caused shutdowns of practically all pulp and paper mills down river from Camas, Wash., in late May and June. The rehabilitation of some hard hit machine rooms may halt certain operations until August. Besides loss of production, some of the mills suffered extensively from damage of the swollen river waters.

At St. Helens, Ore., damage of \$1,000,000 was estimated for the community's waterfront, half of which was accounted for in damages to St. Helens Pulp & Paper Co.

Columbia River Paper Mills, Vancouver, Wash., was one of the first mills to close down, largely through the foresight of F. W. Leadbetter, president and general manager of the company. Consequently it

was possible to make preparations for the anticipated flooding of plant facilities by transporting movable equipment and materials to higher sites beyond reach of the water. This included trucking many tons of pulp to Portland, Ore. After the machines were shut down, they were stripped, parts waterproofed, and bearings packed. Other protective measures taken included sandbagging, weighting docks down with sand and gravel, shutting down and cooling boilers, removing plant motors and placing log booms around the plant to stave off waterborne debris.

Crown Zellerbach Corp.'s pulp and paper mills at Camas closed down one day following closure of the Vancouver mill, except for the new No. 15 machine, which kept on production about a week. Closure of the operations' sawmill necessitated discontinuance of production in other parts of the plant due to shortage of raw product. According to Frank N. Young-

man, vice president, principal loss during the original high stages of the flood was in the stoppage of production, however there was some physical damage incurred.

Western Waxed Paper Co., Division of Crown Zellerbach Corp., North Portland, Ore., was badly hit by the flood waters after dikes in the vicinity were broken. Waters flooded the plant and office to a depth of 5 to 6 feet at about the same time the city of Vanport met destruction.

Fir-Tex Insulating Board Co., St. Helens, also closed down by the flood, had its chip unloading dock and chip plant under water. Motors were removed. The chip pit end of the mill took in water, but this was pumped out as fast as it entered. The boiler room was shut and cooled.

At Longview, Wash., the varied woods products operations of Weyerhaeuser Timber Co. were all brought to a halt, chiefly because of fear that the vibration of heavy saws and other heavy machines would weaken the already water-softened dikes. Many homes of employees of the Longview industries were vacated. The Weyerhaeuser pulp mills and other plants were on ground about seven feet below the water level outside the dikes.

Wisconsin Shuts Barn Door When Horse Is Gone—or Almost

At the urgent behest of President D. C. Everest, of Marathon Corp., who said the state of Wisconsin had followed "a short-sighted policy" for 30 years in permitting state forest resources to become virtually exhausted, and of other witnesses, the Wisconsin Conservation Commission has approved this program for legislative action:

An enlarged fire protection area which would extend into Marathon, Eau Claire, Chippewa, Washara and Clark counties.

An expansion of the nursery program. Reforestation activity on private property.

A plan for educating people on the need for selective cutting and reforestation.

Greater research concerning the pests which destroy trees.

Edward Kilp, manager of wood procurement, Nekoosa-Edwards Paper Co., urged legislation to require selective cutting.

Wisconsin Group Buys Wausau Paper Mills

D. Clark Everest, president of Marathon Corp., and a group of friends and associates have purchased Wausau Paper Mills Co., of Brokaw, Wis., 80-ton sulfite pulp and paper mill. Mr. Everest, formerly treasurer of the company, now becomes its president.

Other new officers: Eugene G. Ingalls, vice president and manager (was formerly sulfite mill superintendent); Harold Knott, who continues as vice president and sales manager, and Glenn Stevens, secretary-treasurer (formerly assistant secretary-treasurer). The four officers and N. F. Becker of Rhinelander, D. B. Smith of Merrill and F. J. Dvorak of Wausau, compose the board of directors. Chester W. Cone will be in charge of woods operations and wood purchases.

McHale Becomes V-P Of Southland Paper Mills

W. L. McHale, who was made vice president and general manager of Southland Paper Mills, Inc., Lufkin, Texas, March 30, is a native of Darien, Conn., graduating in mechanical engineering from Pratt Institute in 1921.

His career was started with Electric Specialty Co., Stamford, Conn., on motor windings. He then became associated with The Dorr Co. designing causticizing plants for three years, then joining the George Hardy organization, which he served for 16 years during which he participated in the designing of mills at Monroe, La., Port St. Joe, and Fernandina, Fla., Savannah and St. Marys, Ga., and Bogalusa, La. In newsprint, he participated in design of Maine Seaboard, Anglo-Canadian Paper Co., Spruce Falls, and other Canadian mills and finally, Southland Paper Mills, Inc., at Lufkin.

Upon completion of the Southland mill four years ago, Mr. McHale joined the plant as mill manager.

A married man, Mr. McHale has one daughter, a Phi Beta Kappa senior in chemistry and science at St. Lawrence University, Canton, N. Y.

Site Chosen for New Kraft Pulp Mill

Tidewater location on Northumberland Channel, which separates Vancouver Island from Gabriola Island, a few miles south of Nanaimo, B. C., has been chosen as the site for the 200-ton \$12,000,000 bleached sulfate pulp mill to be built by the H. R. MacMillan Export Co.

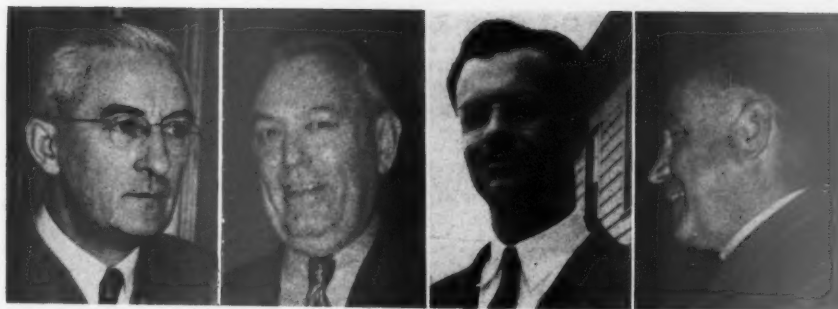
Announcement was made by H. R. MacMillan, president of the company, who recently named Vice President E. Blake Ballentine to organize details of the pulp mill project, assisted by Jack Prescott.

Mr. MacMillan says that contracts representing the expenditure of \$3,000,000 have already been placed. Foundations will be laid this summer and it is hoped to start the mill in 1949. Present program is to utilize slabs, sawdust, chips and other materials from the nearby H. R. MacMillan sawmills. Howard Simons is drawing plans.

Reports of Third News Mill Current in South

Reports are current this month of plans to build a third Southern pine newsprint mill in the South — this one to be in the Southeast — but as this issue went to press **PULP & PAPER** was reliably informed that no arrangements had yet been reported to arrange for pulpwood for such a new mill. Also, prominent Southeastern industry leaders had not yet heard of any serious move in this direction.

Competition for pulpwood in Southeast U. S. is already very keen in view of the concentration of mills here. The South is now increasing its production of newsprint with a new mill being built in Alabama under direction of Kimberly-Clark for a group of papers and a machine just added at Southland Paper Mills in Texas.



IN INDUSTRY NEWS (left to right):

W. L. McHALE, recently made Vice President and General Manager of Southland Paper Mills, Lufkin, Tex. A native of Connecticut, he is a veteran of the Geo. F. Hardy organization and helped build many Canadian and Southern U. S. mills.

J. S. REICHERT, of E. I. duPont de Nemours & Co., Niagara, N. Y., prominent in bleaching developments, who was elected new Chairman of the Western N. Y. Group of the Empire State TAPPI Section.

NOAH H. ANDERSON, who recently became Purchasing Agent of Longview Fibre Co., Longview, Wash. Born in Clairborn, Texas, he was 12 years in California in the aircraft industry and went to Longview as an engineer.

H. R. MacMILLAN, president of H. R. MacMillan Export Co., one of Canada's biggest timber operators, who decided with his staff upon Northumberland Channel, near Nanaimo, Vancouver Island, as the site for a new \$12,000,000 bleached sulfate pulp mill.



D. C. PORTER (left), who has been appointed Mill Manager of the new Longlac Pulp & Paper Co. kraft pulp mill at Terrace Bay, Ont., where he will take up residence about July 15.

GEORGE W. GRIFFIN (right), appointed Eastern Sales Representative for Gilbert Paper Co., Menasha, Wis., with headquarters in the Gilbert New York Office. He was formerly with American Writing Paper Corp. and Standard Register Co.

K-C Announces Transfers

Management transfers involving direct, subsidiary and affiliated operations of Kimberly-Clark Corp. have been announced by H. G. Boon, vice president in charge of operations. Andreas Christensen is being transferred to Kapuskasing, Ont., as production manager of Spruce Falls Power & Paper Co., Ltd., replacing F. Harold Davis who will join the chief of staff office at Nee-nah as staff superintendent of newsprint.

D. C. Porter will be transferred to Terrace Bay, Ont., as mill manager of Longlac Pulp & Paper Co., Ltd.

GEORGE COBEAN, president of Bulkley, Dunton Paper Co., S. A., 295 Madison Ave., New York, recently returned from his 24th crossing of the equator to report that lack of dollars and other hard currency credits is the most serious obstacle in developing of the South American paper market. His latest trip of four months took him to Brazil, Uruguay, Chile and Argentina.

Rayonier Laboratory Will Move to New York

The Central Chemical Laboratory of Rayonier Incorporated will be moved from Shelton, Wash., where it has been located since its inception, to Pleasantville, N. Y., near New York City, within a year, according to Edward Bartsch, president.

Quite different than most pulp mill laboratories, this Rayonier institution is featured by what is virtually a pilot plant in rayon manufacturing. It is particularly pointed to meeting the pulp needs of rayon and cellophane manufacturers and studying their conversion practices, and its move to New York will place it in easy access of Rayonier customers. It is one of the largest and most advanced labs of this industry, with a large proportion of highly skilled personnel.

While in Shelton, Mr. Bartsch also said that expansion of the Shelton mill itself was in the offing, especially because of this mill's affinity to the growing cellophane industry.

He also said a questionnaire on a proposed Rayonier pension plan has been submitted to many company employees and that government officials also are studying its proposed features.

Niagara Group Elects

J. S. Reichert, of E. I. duPont de Nemours & Co., Niagara Falls, N. Y., was elected general chairman of the Western New York Group of the Empire State Section of TAPPI, recently.

Other officers elected were: G. H. Rand, Jr., International Paper Co., program committee; G. Storin, Niagara Alkali Co., dinner committee; W. Day, Kimberly-Clark Corp. of Niagara Falls, attendance committee; and I. Earle, Upson Co., Lockport, N. Y., publicity committee.

TOM CARTER, formerly of the new design department of Cameron Machine Company, Brooklyn, N. Y., has been made head of their engineering department—and not chief engineer, as previously reported, according to later advices from the company.



RAYMOND F. BENNETT, of Pisgah Forest, N. C., the hard-working retiring President of the Superintendents' Association, is shown here winding up a busy year by having fun at the New Orleans "Wake 'Em Up Breakfast."

He is undergoing a surprise initiation into the "International Brotherhood of Migratory Peddlers," a new organization which now has three locals or "waiting rooms"—the most recent one in the South.

L. to R. above: RAY SMYTHE, veteran Pacific Coats equipment representative of Portland, Ore.; GEORGE WITHAM, of Orr Felt, Mobile, Ala.; RAY BENNETT, and LAWRENCE K. SMITH, Manager of PULP & PAPER. In the tradition bowler hats and trick mustaches, the members of the I. B. M. P. are presenting Mr. Bennett with the "emblems" of good salesmanship. In this picture, Mr. Bennett is cautiously sniffing a bottle of perfume, "used by peddlers to get on the good side of the boss's secretary—and it's not 'Evening in Paris,' nor 'Morning in Spring' but 'A Night in Basin Street,'" his initiators said.

350 Out for Show By Migratory Peddlers

There were moments of relaxation at the Superintendents Convention in New Orleans. One was May 20 at which Frank E. Hutton, of Babcock & Wilcox Co., presided. The program of fun had John Eversman, of Ecusta Paper Corp., as master of ceremonies.

Most hilarious event was provided by the 8 o'clock "Wake 'Em Up" Breakfast Friday at which Raymond F. Bennett was initiated into an honorary membership in The International Brotherhood of Migratory Peddlers. A crowd of 350 delegates turned out for the show.

The IBMP was formed in 1941 by a group of Pacific Northwest supply men serving the pulp and paper industry. The keynote of the organization is greater service to the industry.

A Gulf Section (Waiting Room No. 3) was formed, composed of the following: George Witham, Orr Felt & Blanket Co.; C. D. Kingsbury, Solvay Sales Corp.; William Stitt, Buckman Laboratories; Norman Weil, W. S. Tyler Co.; L. A. Thompson, Hercules Powder Co.; W. W. Henderson, W. W. Henderson & Sons; George Hardaker, Lockport Felt; Gene Brechard, Appleton Machine and others; and F. S. Lapeyre, Murray-Baker-Frederic Co.

These men served as a supporting cast to a select crew from the Northwest who maneuvered the proceedings. These included: Ray Smythe, Rice Barton Corp. and Heppenstall Co., who is international president, W. R. No. 1, Portland, Ore. and who acted as director of ceremony; Larry K. Smith, Manager of PULP & PAPER, and president, W. R. No. 2, Seattle, Wash., assistant director of the ceremony; A. G. Natwick, Crown-Zellerbach Corp., Camas, Wash., musical director; and M. J. Maguire, Hercules Powder Co., Portland, Ore., choreographer.

Until the fun started, Mr. Bennett was under the impression he was to be "presented" with an honorary membership, not initiated into one.



HERE ARE THE NEW MEMBERS OF THE "INTERNATIONAL BROTHERHOOD OF MIGRATORY PEDDLERS," of Gulf Waiting Room No. 3, singing their peddlers song to Retiring President Ray Bennett of the Superintendents (middle, facing the IBM group).

Ray Smythe, of Portland, Ore., who directed initiation of Mr. Bennett as honorary member, is at extreme left in foreground.

Others, l. to r.: F. S. Lapeyre, Murray-Baker-Frederic Co., New Orleans;

Norman Weil, Tyler Co., New York; George Witham, Orr Felt, Mobile; L. A. Thompson, Hercules Powder, Atlanta; A. G. Natwick, of Crown Zellerbach Corp., Camas (another honorary member); W. W. Henderson, Henderson & Sons, Pensacola, Fla.; Bill Stitt, Buckman Laboratories, Memphis; C. O. Kingsbury, Solvay Sales Corp., New Orleans; George Hardaker, Lockport Felt, Asheville, N. C.; Gene Brechard, Appleton Machine, Atlanta, and Milton Maguire, Hercules Powder, Portland, Ore., member of W. R. 1 of that city.

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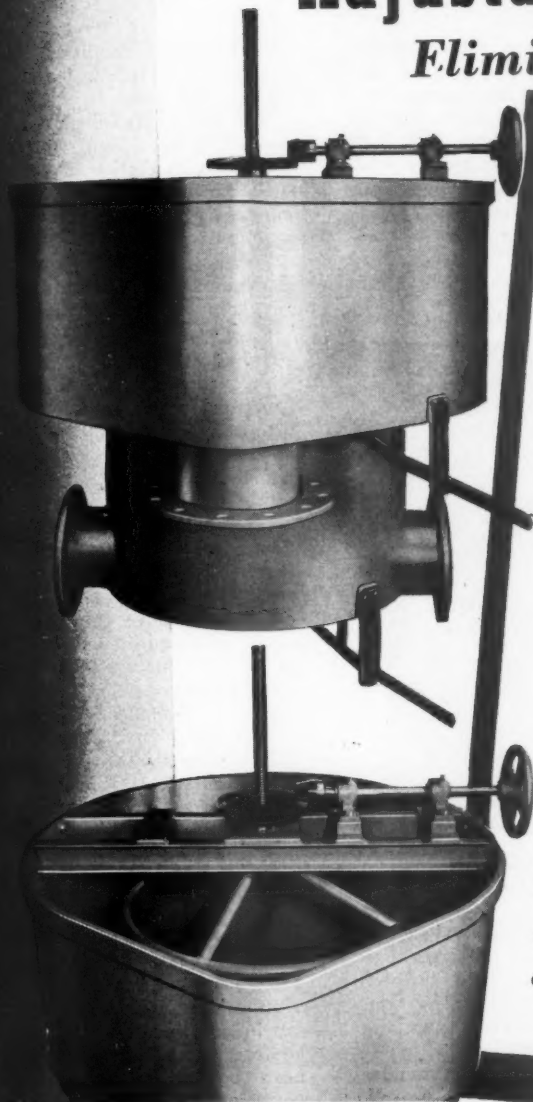
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Adjustable Mixing Box

Eliminates Cascading



Regardless of volume or stock consistency, the Cheney Bigelow Mixing Box assures a thorough mix—*without spilling or cascading stock and water.*

An adjustable baffle turns the trick; it's easily controlled by the operator through a conveniently located hand wheel. Inlets for both stock and water are at the *bottom* of the mixing chamber (where they belong, for a thorough mixing job); stock-collecting pockets have been eliminated; all boxes are custom-built to *your* requirements.

All in all, the Cheney Bigelow Mixing Box is a neat package, typical of the modern Cheney Bigelow. The products listed below are typical, too, of the way Cheney Bigelow is successfully supplying today's paper industry with *modern* equipment.

THICKENERS
WASHERS
CYLINDER VATS

CYLINDERS
WINDERS
DRIVES

DANDYS
WIRE CLOTH
FOURDRINIER WIRES

CHENEY BIGELOW

CHENEY BIGELOW WIRE WORKS
417 LIBERTY ST., SPRINGFIELD, MASS.

JULY, 1948

"Mr. Nibroc" Starts Up

BROWN COMPANY'S NEW MACHINE

This month Brown Company, historic pulp and paper organization with mills at Berlin, N. H., and La Tuque, Canada, announced formally from headquarters in New York that their new 200-ton sulfate mill was in commercial operation, and that "Mister Nibroc" was making paper towel at a speed of 1200 feet per minute. "Mister Nibroc" is the new Rice Barton Yankee-type 196-inch towel machine.

Thus came into operation a completely integrated process that was described in detail in a series of three articles in **PULP & PAPER** which began more than a year ago. The first article appeared with a cover photo in February, 1947, and discussed "men and research" behind all of Brown's history. The second was in the July, 1947, issue, describing the woodlands organization which is the basis for diverse pulp operations. And in December, 1947, **PULP & PAPER** told its readers of the Brown mills and their new program, with the first published pictures of the new sulfate kraft plant and "Mister Nibroc" (No. 10 machine) under installation.

As reported in the last article, the 60,000-ton mill is supplying pulp direct through a pipe-line to the paper mill, principally to the No. 10 machine for paper towels and Nibroc converting papers. Basic to the operation is the use of both hardwoods and softwoods. Sulfate production at Berlin means that the Canadian mill will place more emphasis on specification pulps such as "cellate" and "solka."

Chief men in Brown heading the project were F. G. Coburn, president; Wentworth Brown, vice president in charge of manufacturing; Ernest H. Maling, vice president in charge of finance; Downing P. Brown, vice president in charge of sales; E. E. Morris, works manager; George A. Day, research and development director; and C. A. Johnson, chief engineer. An example of how the project design uses as many of the present facilities as possible is seen in wood handling: identical wood handling facilities serve for both the new kraft mill and the older sulfite mill. Power, steam, and other services for the sulfite mill are utilized by the sulfate operation.

O. C. Schoenwerk, consulting engineer of Chicago, made studies of the most modern sulfate mill methods and, with Brown officials, put some of them into practice at Berlin. Detailed engineering and construction was handled by Rust Engineering.

General American Transportation Corp. furnished the four welded digesters in the new mill. They are 48 ft. by 11 ft. 2 inches with 3800 cubic foot capacity for 125 pounds pressure. Arranged for direct

or indirect cooking are Fibre Making Process bottom screens. Foxboro supplied automatic controls on liquor measuring tanks, cooking cycle, and inert gas relief. Digesters discharge into two blow tanks and dilution is controlled by Foxboro equipment. There is a three-cylinder vacuum washer supplied by Oliver United Filter designed to operate alternately on hardwood and softwood. Bird Machine Co. Jonsson screens are ahead of the washers.



FREDERIC G. COBURN, President of Brown Co., Berlin, N. H. His offices are in New York.

High density washed pulp is stored in six large concrete tanks of 600 tons total capacity, and is then pumped through controlled equipment to flat screens, then is thickened and delivered to a pumping chest. Low lift pumps take it to pipelines which are directed to the Cascades mill nearly two miles down the Androscoggin River.

General American furnished the six-body quintuple-effect evaporator which takes the black liquor and concentrates it from 15 to 55 per cent solids for combustion in the furnace. The unit is designed with equal heating surface on each of the six bodies, and a vacuum of 26 inches is used in the fifth effect.

The recovery unit furnished by Combustion Engineering handles all of the black liquor resulting from the sulfate process. The unit is designed to handle 680,000 pounds of solids in 24 hours and produces steam at 450 psi and 700 degrees F. The recovery unit auxiliaries and accessories, including automatic air puff type blowers for cleaning the boiler surfaces, are said to be among the most modern and efficient in present-day use.

There is an electric precipitator by Research Corp. General American supplied

the causticizing facilities. The rotary kiln is General American, rated at 70 tons of CaO per 24 hours.

The three parallel pipe-lines to the mill are 11,000 feet long, wood-lined and 16 inches in diameter. Flow is by gravity. Two lines are for pulp, and the third carries fresh water from the Burgess filter plant. As the pulp enters the Cascades mill it is thickened by Oliver United thickeners and passes through a DeZurik regulator for consistency.

Slush tanks supply the new machine. Pre-hydration is by a Dilts Hydratiner. Pulp is then drawn to a 20-foot Dilts Hydrapulper which completes the furnish in proportions of hardwood, softwood, etc., as well as addition of chemicals. Baled lap stock may also be used. A single panel push-button board by Foxboro automatically controls the entire operation from the moment stock enters the Cascades. Identical method is in use in the beater room where the stock is discharged from the Hydrapulper into an agitated tile-lined chest from where it is pumped to a flow box supplying three Dilts Hydratiners, then to another flow box supplying a pair of jordan.

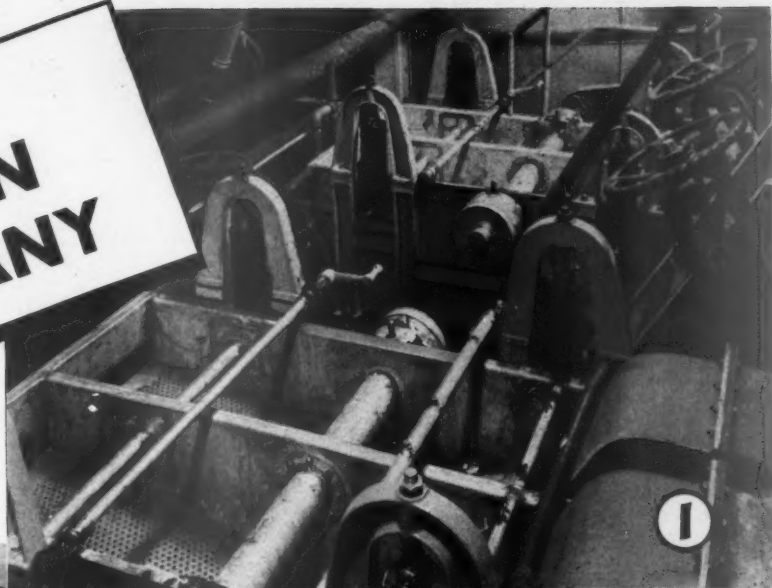
The head box is stainless steel lined and equipped with Van De Carr inlet slice. The two Bird screens are equipped with Dirts.

Machine Description

"Mister Nibroc" consists of Fourdrinier, top felt suction roll, bottom wet felt equipped with wringer rolls, a 12-foot Yankee dryer, pre-set crepe dryer and dryer section with a two-roll hydraulic calender, center-line Pope reel, unwinder with regenerated motor brake control and a Rice Barton winder. The head box is stainless steel lined and equipped with Van De Carr inlet slice. The two Bird screens are equipped with Dirts.

The Fourdrinier is 196 inches on the wire and 100 feet in length. It has the latest removable features developed by the builders. In changing wire the Fourdrinier rolls into the tending aisle on swing beams and then on removable beams located in the aisle. Wire is then draped over the pit from stringing devices which support the wire as the Fourdrinier is moved back into place. The breast roll is 30 inches in diameter, all rolls balanced dynamically to better than 1500 feet per minute. Table rolls are of six-dandy type construction, 16-inch diameter by 204-inch face. They are followed by conventional table rolls of 11-inch diameter which are rubber covered. There are five stainless steel suction boxes which are equipped with grain-maple covers and have hydraulically equipped crosswise os-

AT BROWN COMPANY



1 These **BIRD JONSSON SCREENS** are installed in the new sulphate pulp mill ahead of the brown stock washers. They keep the stock free of knots that would otherwise tend to break the vacuum on the washers. Washing efficiency is tremendously increased. Maximum black liquor recovery is assured.

Jonsson Screens are proving ideal for this application as well as for knotting all kinds of pulp. High capacity, insignificant loss of fibre in the tailings, low power cost and ability to handle relatively high consistencies are outstanding advantages of Jonsson screening.

2 These **BIRD SCREENS** are playing a vital part in Brown Company's modernization program, by delivering clean, uniform, well individualized fibres up to the maximum capacity of the new 196-inch, 1200 ft. per min. paper machine.

Big, modern Bird Screens are identified with virtually every such paper production program the world over. 85% of all the paper made in North America passes through Bird Screens.

3 and note the **DIRTEC TAILINGS UNITS** in the center foreground of the picture. Dirtecs for Bird Screen tailings have become standard practice on all new in-

stallations and are replacing auxiliary screens on many existing screen installations. They assure greater dirt removal efficiency with almost no fibre loss.

BIRD
MACHINE COMPANY
South Walpole, Massachusetts

cillation. Suction boxes have Nash Hytor vacuum pumps and two water pumps.

Tile lines the wire pit and beneath the couch is a pit with propeller type agitation where consistency is controlled by electronics. Stock is pumped back to machine chest whenever it drops from the couch roll. The two suction presses are of Beloit design which are 36-inch diameter with 28-inch diameter rubber-covered press rolls. Top felt suction roll is not rubber covered. The pressure roll is 28 inches, electrically driven. The Yankee dryer is Beloit construction, 144-inch diameter and 203-inch face. Loading on the presses, pressure rolls, etc., is hydraulic by Vickers pump arrangement.

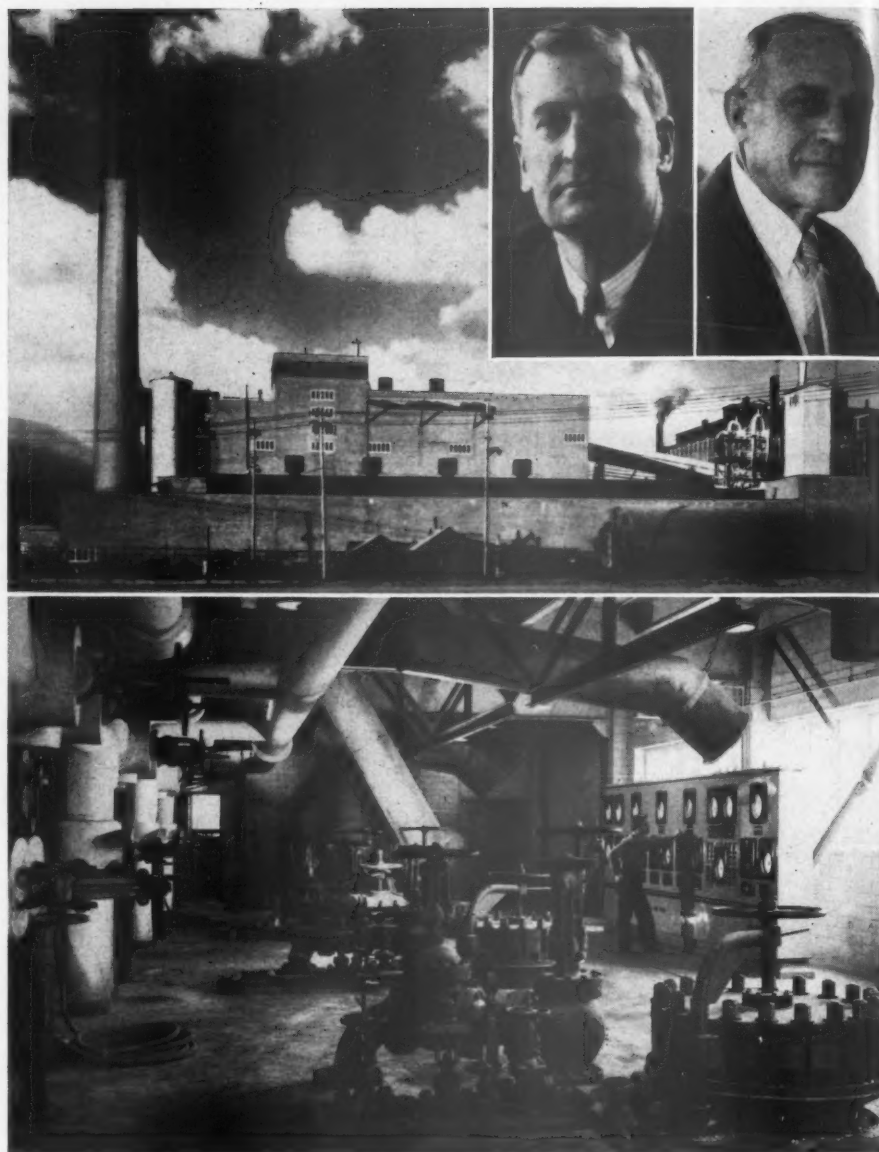
There is a 60-inch diameter crepe set dryer following the Yankee, and this in turn is followed by 25 additional 60-inch diameter, 194-inch face, dryers in two sections, the first being of eight and the second of 17 dryers. Five felt dryers are also supplied. A rope carrier takes the sheet from the creping doctor and the carrier rolls to the first crepe set dryer. It is conveyed through the dryers, the calender rolls, to the Pope reel, where air engages it with the reel spool, eliminating human handling.

The Rice Barton winder will operate at 4000 feet per minute, and features an outward rotation which eliminates ingoing nip, a very important safety feature.

On the main dryer there are three Ross units of supply and exhaust as well as Ross scrubbers, Ross Briner economizers and exhaust units. Two of these supply units deliver air to the underside of the roof and the other system delivers air to the bottom return felt.

The Yankee dryer is fitted with a special Ross transite and steel hood of panel construction and is provided with a complete Ross vapor absorption system which includes supply fan, heaters, crescent-shaped header and Ross high-impingement-type nozzles which deliver the air to the sheet as it travels on the dryer. As the Yankee dryer is followed by a crepe set dryer and twenty-five dryers arranged in two tiers, the balance of the machine is also hooded with a Ross panel type Transite-and-steel hood supported from the dryer frame.

To help eliminate the lint problem this Yankee system is also supplied with a Ross scrubber which may also be used in combination with the Ross vertical cop-



AT TOP RIGHT ARE WENTWORTH BROWN (left), Vice President in Charge of Manufacturing, and E. H. MALING (right), Vice President in Charge of Finance and Accounts and Treasurer, of Brown Co.

The new kraft mill is shown above, and below is the digester operating floor with control panel in background.

per economizer for heating water. The Ross exhaust system is of the draw-through type. The total exhaust air is approximately 117,000 cfm and the supply about 106,000 cfm, and there is a total of 40 sections of Ross briner economizer.

The sectional electronic controlled drive is designed for speeds up to 1500 feet.

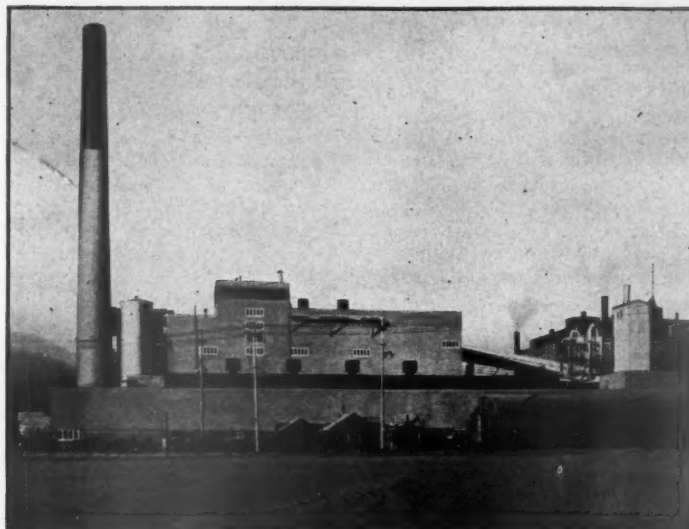
Credit to Personnel

Brown management, proud of the fruition of the long program and readying for still other improvements as funds be-

BROWN COMPANY OFFICIALS, l. to r.: H. G. SCHANCHE, Vice President in charge of Woods Operations; E. E. MORRIS, Works Manager; G. A. DAY, Director of Research and Development; W. A. JOHNSON, Manager, Paper Division;

ALMAND, General Supt., Paper Division; L. M. CUSHING, Manager, Pulp Division; C. R. P. CASH, General Supt., Pulp Division.





The New Burgess Pulp Mill

"MISTER NIBROC" IS ROLLING

Here's a composite portrait of "Mister Nibroc" the new towel machine at Brown Company's Cascade Mill in New Hampshire. From the new Burgess Pulp Mill, a three-mile pipe-line feeds pulp direct to "Mister Nibroc"—the last word in streamlined towel production.

Three years in building, "Mister Nibroc" embodies the most advanced equipment, construction engineering and modern design in the towel-making field. The suppliers and manufacturers who provided their quality products and know-how share Brown Company's pride in a job well done.

BROWN COMPANY

FOREMOST PRODUCERS  PURIFIED CELLULOSE

PULP SALES OFFICES: 500 FIFTH AVENUE, NEW YORK 18, N. Y. • 465 CONGRESS STREET, PORTLAND 3, ME. • 110 S. DEARBORN STREET, CHICAGO 3, ILL. • 58 SUTTER STREET, SAN FRANCISCO 4, CAL. • BROWN CORPORATION, 906 SUN LIFE BLDG., MONTREAL 2, P. Q., CANADA



JULY, 1948

come available, is careful to credit many Brown old-timers for the new integrated operation. They mention names like L. M. Cushing, manager of the pulp manufacturing division, who has been with Brown 25 years; C. R. P. Cash, general superintendent of the division; Lamar M. Murray, superintendent of the kraft mill; Walter A. Johnson, manager of the paper manufacturing division; Raymond J. Almand, general superintendent of the division; Ervin Vickman, supervisor of the new machine; Temple Birt, Archie Belangér, and Wilbrod Carrier, causticizer operators, all with Brown more than 34 years; and John Belanger, William Gagnon, and Frances Sweeney, digester cooks, the first of whom came to Brown in 1913. They also credit J. E. Mullaney, project manager and now acting chief engineer; Henry W. Stafford of the engineering department, who served as project engineer; Bernard Covio, of the engineering division, who directed instrumentation work;

Arthur Brosius of the paper division; Wilfred Lepage, engineering; George Craig, plant engineer at Cascade; and Ernest Cook, assistant chief engineer.

Consultant Advises Atenquique Mill

J. H. O'Connell, paper mill consultant, Washington, D. C., has been engaged by Compania Industrial de Atenquique, S. A., operators of the new kraft pulp and paper mill at Atenquique, Jalisco, Mexico, to advise on some of the technical problems of that mill. Last month we reported that Stanley Wilkes became acting mill manager, succeeding David Kuhe.

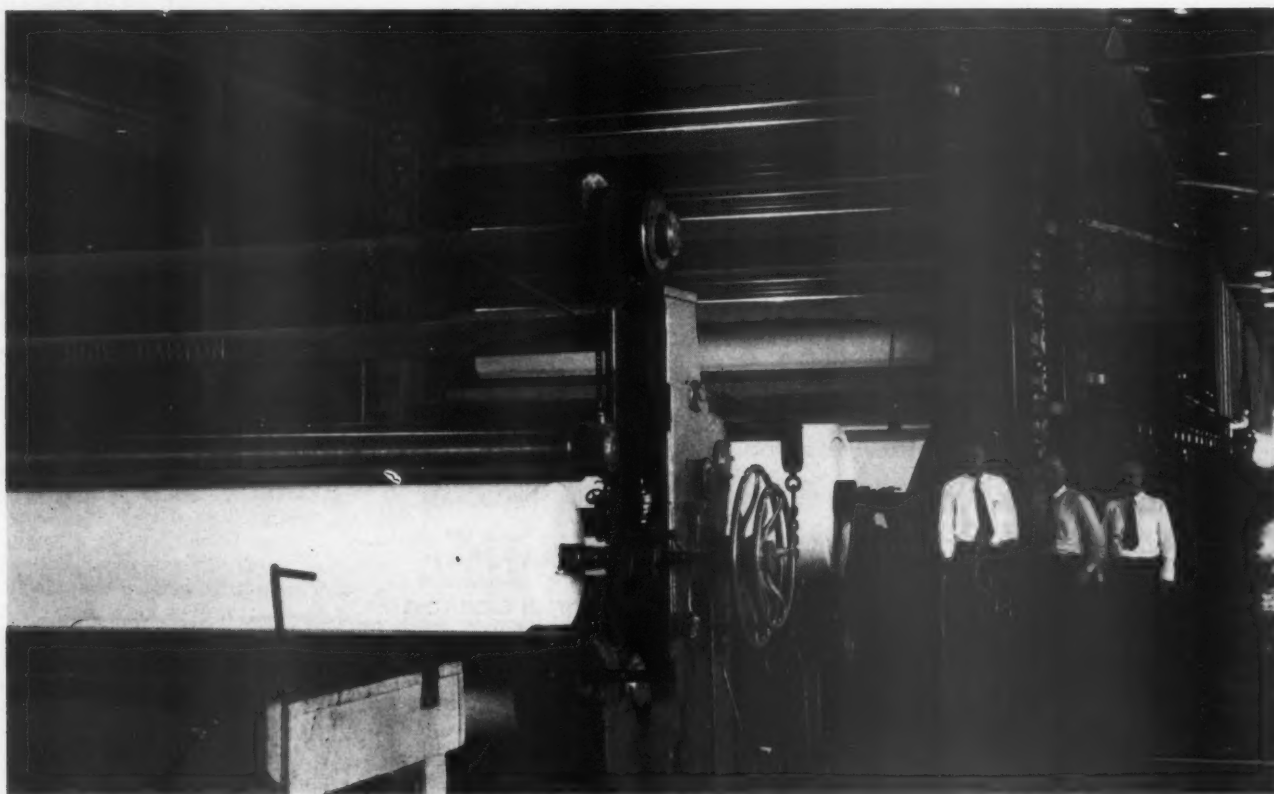
Nacional Financiera, S. A., a government promoting agency, holds all preferred stock and part of the common stock and most of the credits against the mill. It has been in production since early 1947, often exceeding its 80-ton-a-day capacity.

Propaganda Among Alaska Indians

Rita Singer, identified as a representative of the law firm, Curry, Cohen and Bingham, of Washington, D. C., has completed a tour of all the Southeastern Alaska Indian villages, spreading propaganda among these Indians regarding the Interior Department-instigated Indian "aboriginal rights" to the ownership of millions of dollars worth of pulpwood in the U. S. National Forest in Alaska.

Also on this trip she interviewed many Indians and gathered notes on tribal histories and legends which would be used by the Indian lobbyists in Washington to support the claims of Indian ownership to this timber. Interior Department support of these activities has caused the U. S. Forest Service to abandon its efforts to sell this timber to private interests for Alaskan pulp and paper mills.

CHILLICOTHE PAPER COMPANY'S NEW NO. 3 MACHINE



HERE IS A PICTURE of the new No. 3 164-inch trim Rice-Barton Fourdrinier paper machine at Chillicothe Paper Co., Chillicothe, O., which was described in detail along with a description of the rest of the expansion program at that mill in an article in PULP & PAPER on page 22-24 of the May, 1947, issue.

Standing near the two high-speed calender stacks are (left to right): E. F. BEARCE, Vice President and Production Mgr.; F. L. ZELLERS, General Supt., and AUSTIN P. STORY, President.

In the May 1947 issue of PULP & PAPER we published a detailed description of the carefully planned expansion program of Chillicothe Paper Co., based on long term customer demand for book, off-set and specialty papers. A new 80,000 lb. capacity boiler was almost ready for its first fire when PULP & PAPER visited the Chillicothe, O., mill at that time, and a 4,000 kw. GE steam turbine was already installed.

This spring the entire program was finally completed and the picture on this page shows the new Rice Barton Fourdrinier of 175 inch

width. It has a 70-ft. wire, a suction couch roll, suction press roll, twenty-two first section dryers, size press, seven second section dryers, two calender stacks, uniform speed reel and Rice, Barton winder.

The head box and slice were supplied by Valley Iron Works. Two No. 3A screens were supplied by Bird Machine Company, which company also supplied a system of Dirtex units.

The driving arrangement is a single motor connected to the center of the line shaft driving to spiral bevel gears through cone pulleys. The driving motor is 350 H. P., 250

volt, variable speed supplied with direct current from a 300 Kw. motor generator set. Airflex clutches are provided between the bevel gear units and the intake shafts.

President Story of Chillicothe is a native of that important paper town and a graduate of Cornell. Vice President Bearce is a Maine graduate who has had a notable career in engineering in Canada and the United States over 42 years. Superintendent Zellers, the third man in the picture above, is a past national president of the Superintendents Association.

Russell McVicker is purchasing agent and A. I. Cahill is sales manager.

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LEADERS IN LATIN AMERICA

SAN RAFAEL'S MILLS

In all of the Americas south of the Rio Grande, the greatest of all pulp and paper industries is that of Cia. de las Fabricas de Papel de San Rafael y Anexas, S. A., which translated means "The Company of Paper Manufacturing of San Rafael and Subsidiaries, Inc."

Even with the doubling of industrial investments and enterprises in Mexico in 15 years—which, incidentally, has influenced a doubling of the population of Mexico City itself to over 2,000,000 persons in that same period—the San Rafael Company still ranks as one of the half dozen greatest industries of any kind in that country.

Even with the building, or plans for building, of expanded sugar and textile mills, new steel industries, Westinghouse and General Electric plants and motor car industries, San Rafael is still keeping pace with the leaders.

And even with the entirely new pulp and paper mills being built throughout Latin America, nine of them in Mexico alone, the historic San Rafael Company likewise has been growing and improving.

But these figures alone do not tell the best part of the story about San Rafael as it was seen first hand by **PULP & PAPER** on a recent tour of the company's properties and operations. The originality and ingenuity of its engineering, the flexibility of the operations, its valuable records in connection with mill equipment and supplies and costs of all kinds—these are just a few of the things which impress a visitor.

Some of the departures from orthodox practice which are being instituted by the San Rafael mills have been reported by word of mouth in the United States and Canada. Generally, the knowledge about them is pretty sketchy. Some of the novel equipment has not yet had a real opportunity to prove itself, and so criticism heard sometimes in the North is unjustified. In other cases, the equipment or unusual practices have demonstrated their value. In some ways—and responsible Americans of the industry who have seen will testify to this—the San Rafael mills are far ahead of many mills north of the Rio Grande.

Two Mills Near Capital

There are two mills operated by this company. The largest is at San Rafael, nearly 35 miles southeast of Mexico City and a landmark on the lower slope of Iztaccihautl. The plants and community can be seen for many miles around. Snow-capped Iztaccihautl, the 17,000 ft. high "White Lady," rises just above the mill and only a short distance to the south is the active 18,000 ft. volcano Popocatepetl,

which according to Indian legend, blew his top because he couldn't wake up the neighboring lady from her sleep of death.

The San Rafael mill is at an altitude of about 8,300 feet, probably the highest pulp and paper mill in the world, and for nearly 50 years Indian cutters have supplied it with "oyamel"—a short-leaved spruce similar to, but smaller than that grown on the North Pacific Coast,—for its groundwood and sulfite operations. On the slopes of Iztaccihautl and Popo, and in surrounding country at 8,000 to 12,000 feet, this spruce flourishes. Now, with a new kraft mill built at San Rafael, the even more abundant pine, which grows from 4,000 to 14,000 feet and is similar to Southern (U.S.) pine, will be a new source of wood supply.

On the very day that **PULP & PAPER** was visiting San Rafael, a telegram came from the city announcing that the government had granted San Rafael exclusive cutting rights to over 500,000 acres of timberlands in the region of the mill—enough to safeguard the company's future. As you might have guessed, this an-

What Others Have Said About the San Rafael Mill

Many visitors in Mexico—and **PULP & PAPER**'s representative was no exception—have been surprised to find one of the most progressive and modern mills in the world near Mexico City. They were not so surprised, however, after they met the Macorras and their associates and realized the years of study in leading schools of the world, as well as the character of company executives themselves, which are both important parts of the background of the San Rafael mill, described in this article.

Readers of this article may be interested in what others have had to say of San Rafael when they visited it:

For instance, the late "Uncle Jake" Kindleberger, founder and president of Kalamazoo Parchment Co., said he had never seen "a finer or more efficient mill" and was especially impressed by the way in which the management has gone to extremes in the matter of system. This system is briefly described in this article.

Sir Frederick Becker, outstanding figure in the British industry, said he was astonished to find a mill "perfect in every detail" and "a system of control and check the like of which I had never seen before."

A. F. Richter, the late president of Stebbins Engineering & Manufacturing Co., said he was never more attracted by a mill after having visited more than 1,000 of them in Europe and America.

A paper machine manufacturer's engineer said San Rafael was tops in his book and a Westinghouse engineer was amazed to find so modern a layout. Arno Nickerson, New York engineer, President F. W. Leadbetter of Oregon Pulp & Paper Co., William W. Campbell, Jr., of Lockport Felt Co., and many others have cited certain management and engineering features in the San Rafael company as outstanding in any papermaker's country.

nouncement was the occasion for a six-course feast at the general manager's house with a different wine for every course.

The San Rafael mill expects to make about 250 tons of paper a day on 10 machines, with its entirely new *Pusey & Jones* 132 inches (120 inches trim) Four-drinier Yankee now starting up, to make printing papers and other grades, including tissues.

The ten machines must make 90 different kinds of paper. That amazing figure indicates how versatile must be a Mexican mill to meet the needs of that country for all kinds of papers. The day for mills which can specialize in one grade has not yet arrived "south of the border."

Production Capacities at San Rafael

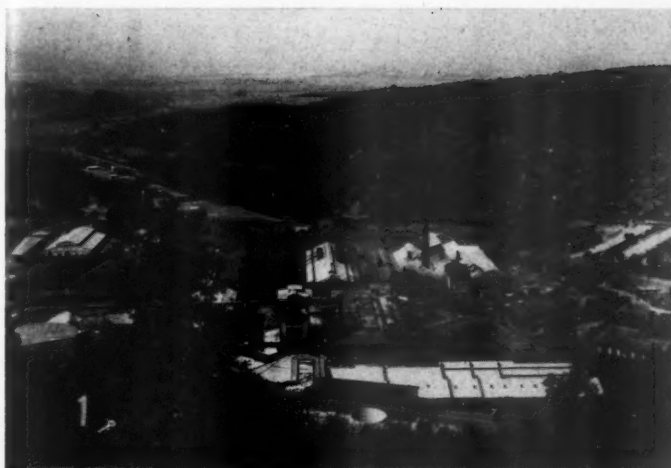
San Rafael will make 60 tons of kraft per day in its new mill and it is now making 60 to 75 tons of groundwood and 20 to 25 tons of sulfite pulp. It also makes a small amount of semi-chemical pulp. With the kraft mill going, purchased foreign pulps will amount to only about 30% of mill requirements. Of its own resources, it will use 10% sulfite pulp, 25% kraft, 30% groundwood, 5% semi-chemical pulp, and 2% rag pulp.

Part of the pulp produced at San Rafael, particularly groundwood, provides part of the raw material for the company's smaller mill at Progreso, 25 miles northwest of Mexico City and at an altitude of 8,035 feet. Fabrica de Papel "El Progreso" is the official name of this mill which has two machines, one Bagley & Sewall, rebuilt in 1947. They make about 60 tons per day of color and white bond, book, ledger, offset and litho, with brush coating of much of the production. Purchased pulp, pulp from San Rafael and waste paper is its raw material.

Both of these mills look almost like medieval walled cities of Spain or France, with the main mills appearing like chateaus or castles. They are built of solid, thick lava stone, obtained right on the spot at San Rafael. A standard joke of San Rafael mill men is to point to the hillside just outside the gates and say: "The mill used to be there."

An artist's hand was in the building, too, as witnessed by the fine iron grill work and decorative iron light standards, made especially by iron workers of Barcelona.

At both San Rafael and Progreso, attractive homes of different architecture, schools, churches, sports clubs and fields, swimming pools and theaters have been built for employees—there are 1600 at San Rafael and 400 at Progreso. The homes are free, as are the facilities, and wages



PICTURES TAKEN AT SAN RAFAEL, visited by PULP & PAPER editor:

1. Looking down on the vast San Rafael company's diverse pulp and paper operations from hill above. Valley route beyond leads to Mexico City.
2. Vast piles of short-leaf spruce or "ayamel" wood. The company was just recently granted cutting rights to over 500,000 acres. The new kraft mill will make

it possible to also use pine, which grows abundantly in the region.

3. Sorting and packing room. The San Rafael mill makes 90 kinds of paper.

4. A railroad train leaving the company-built and owned town for Mexico City, 35 miles away.

and bonuses amount to about 30% of the company income before taxes. There are threeway bonuses—for department efficiency, for company efficiency and also on a percent of the company's profits. But the unions or syndicates, as they are called, with the government almost constantly supporting their demands, are strong. Government and union policies have tended to place the inefficient worker on a par with the efficient one. Only in the past year, under the new Aleman government, has there been some signs of a more constructive attitude toward management.

Like most of the paper industries of Mexico, Spaniards have had a dominant hand in the building and managing of the San Rafael mills. From San Rafael, old employees have moved on to build smaller mills of their own, in much the same way that mill men spread over the U.S. from Kalamazoo, the Fox River in Wisconsin, or from Holyoke or Glen Falls in the East.

The Macorra Family

Spanish immigrants built San Rafael in 1890. In 1898, Jose de la Macorra I, an engineer from Madrid came to Mexico to build a railroad into the mountain forests near the San Rafael mill and by the time he had finished that job, he made such an impression on his employers that

they named him general manager of the paper company. Since then the railroad was sold to the government; the forest lands were expropriated as were other resources of Mexico by the government, but the paper mill continued to thrive.

The elder Macorra, now 80 years old, retired in 1934, but his sons have carried on in the management and engineering of the San Rafael enterprises and his grandsons are being trained for the same assignment.

Jose de la Macorra II, who is well known by leaders of this industry in America and Europe, is the general manager, having trained himself for his career at England's University of Manchester and Rugby College. Another son, Fernando de la Macorra, is general superintendent at San Rafael, having obtained his engineering degrees and education at Massachusetts Institute of Technology, after schooling at Rugby and in France. Another son is a farmer on Mexico's West Coast.

Jose de la Macorra III, has studied at the Paper Institute in Appleton, Wis., at M.I.T. and the University of Texas, and is now the assistant manager and technical director of two new mills now being completed by a separate company, also headed by his father, Jose de la Macorra II, at

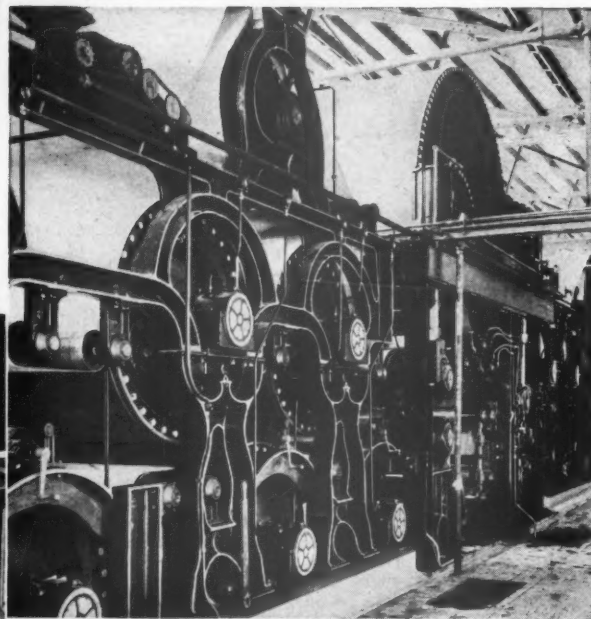
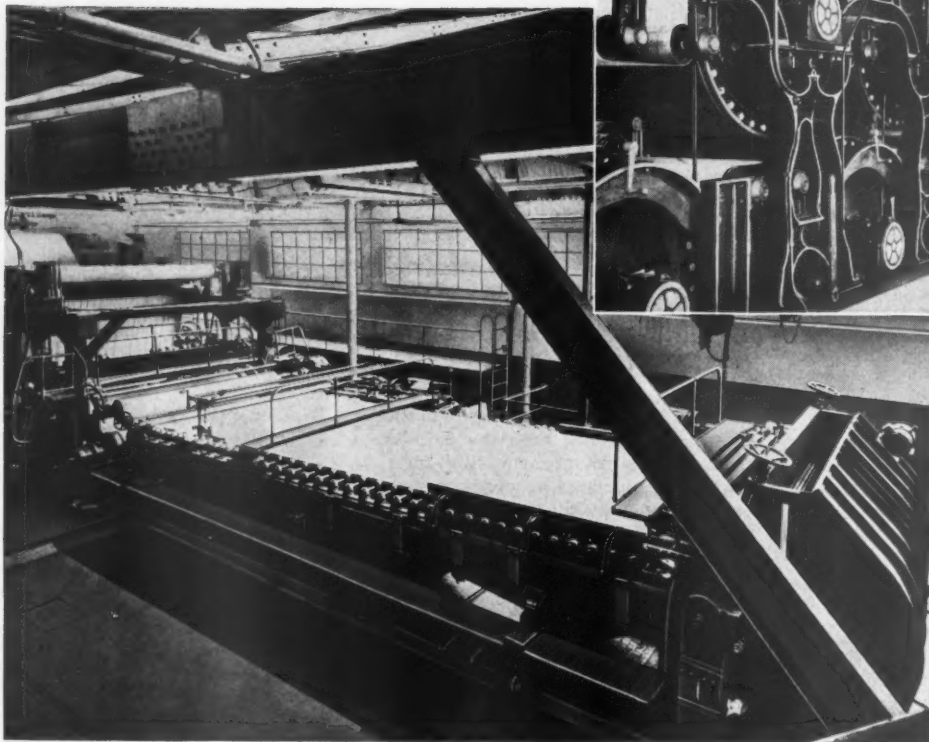
Tlalnepantla, eight miles north of Mexico City. Board, cigarette paper and fine papers will be made on three machines. These two new companies organized by Don Jose indicate his varied activities, which also include heading up a company building a new city at Tlalnepantla, for a whole group of industries being started there.

According to a booklet published by the San Rafael Paper Mills Co. and Subsidiaries, its company history really began when a foundry at San Rafael was sold in 1879 by Watson Phillips & Co., of the firm, N. M. Rothschild & Sons of London to J. H. Robertson & Co. of Mexico. It was then acquired by Ahedo & Co., a company headed by two Spaniards, Don Andres Ahedo and Don Jose Sanchez Ramos, who founded the San Rafael paper mill and produced the first paper there in March, 1892. Later Don Tomas Braniff joined Senores Ahedo and Ramos and the firm Ahedo & Co. was dissolved and the new company—San Rafael Paper Mills Co. and Subsidiaries was organized as of March 1, 1894.

Incidentally, recalling its pre-paper-making history as a foundry, the San Rafael mill is still operating a machine shop which is one of the finest in connection

(Continued on page 42)

4th great



Dryer Section from Dry End toward Yankee

Fourdrinier Part

Features of 132" PuseyJones Fourdrinier Machine at San Rafael Mills

Latest type Flow Spreader combined with adjustable high head nozzle slice, also double auxiliary straight slices.

Fourdrinier part for wire 75 ft. long equipped with suction couch roll, lump breaker roll, six 7" wide suction boxes, double dandy roll stands, Rapi-drape wire changing device, and adjustable wire pitch arrangement.

Press Part of Simplex close-coupled design with rubber covered suction first press, plain second reversed press, and set of smoothing press rolls; water-marking device located between the two main presses.

Dry part in two main sections having one upper and lower felt on each section with 12 ft. diameter M.C. Yankee dryer and intermediate smoothing or size press between the sections; first section comprises fourteen 60" paper and six 48"

felt dryers; second section comprises eight 60" paper and two 48" felt dryers; Bowser lubricating system for main dryer bearings; rope carrier device for threading the sheet through the dryer sections; last overhung paper dryer monel covered suitable for water-cooling; one 5-roll and one 7-roll stack of calenders with Bowser lubricating system in connection with all bearings and Vickery doctors for each roll.

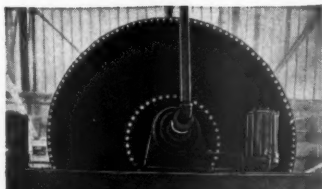
Pope type uniform speed reel of improved design.

Two Bird screens, Midwest-Fulton dryer drainage system, Nash suction pumps, and Allis-Chalmers stock pumps furnished as part of the contract.

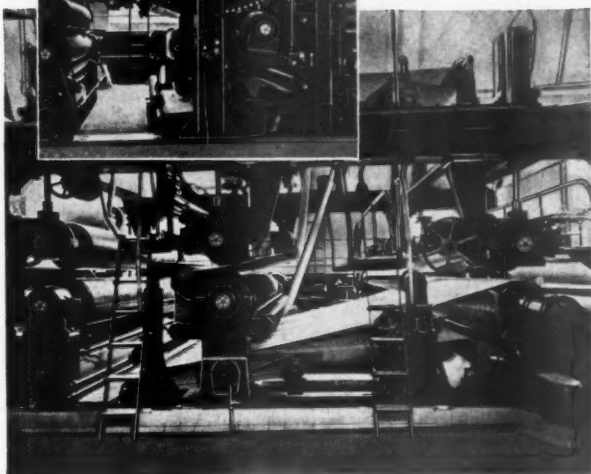
Maximum speed of machine 700 ft. per minute.

All rolls with exception of 60" paper dryers and calender rolls equipped with roller bearings.

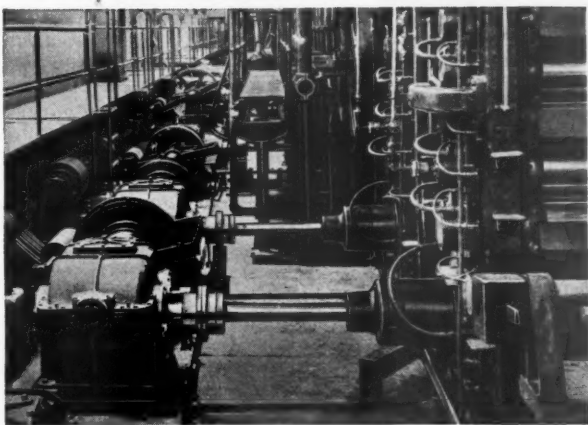
Pusey Jones Machine for San Rafael



12-foot M.G. Yankee Dryer



Simplex Press Section



Variable Speed Mechanical Drive

Good papermaking is a tradition with the San Rafael Paper Mills "south of the border". Four times in 50 years the Macorra family has come to Pusey Jones for the latest in high speed paper-making equipment.

1898—132" Pusey Jones Fourdrinier Machine.

1907—100" Pusey Jones Fourdrinier Machine.

1912—154" Pusey Jones Fourdrinier Machine.

1948—132" Pusey Jones Fourdrinier Machine with 12 ft. dia. M.G. Yankee Dryer.

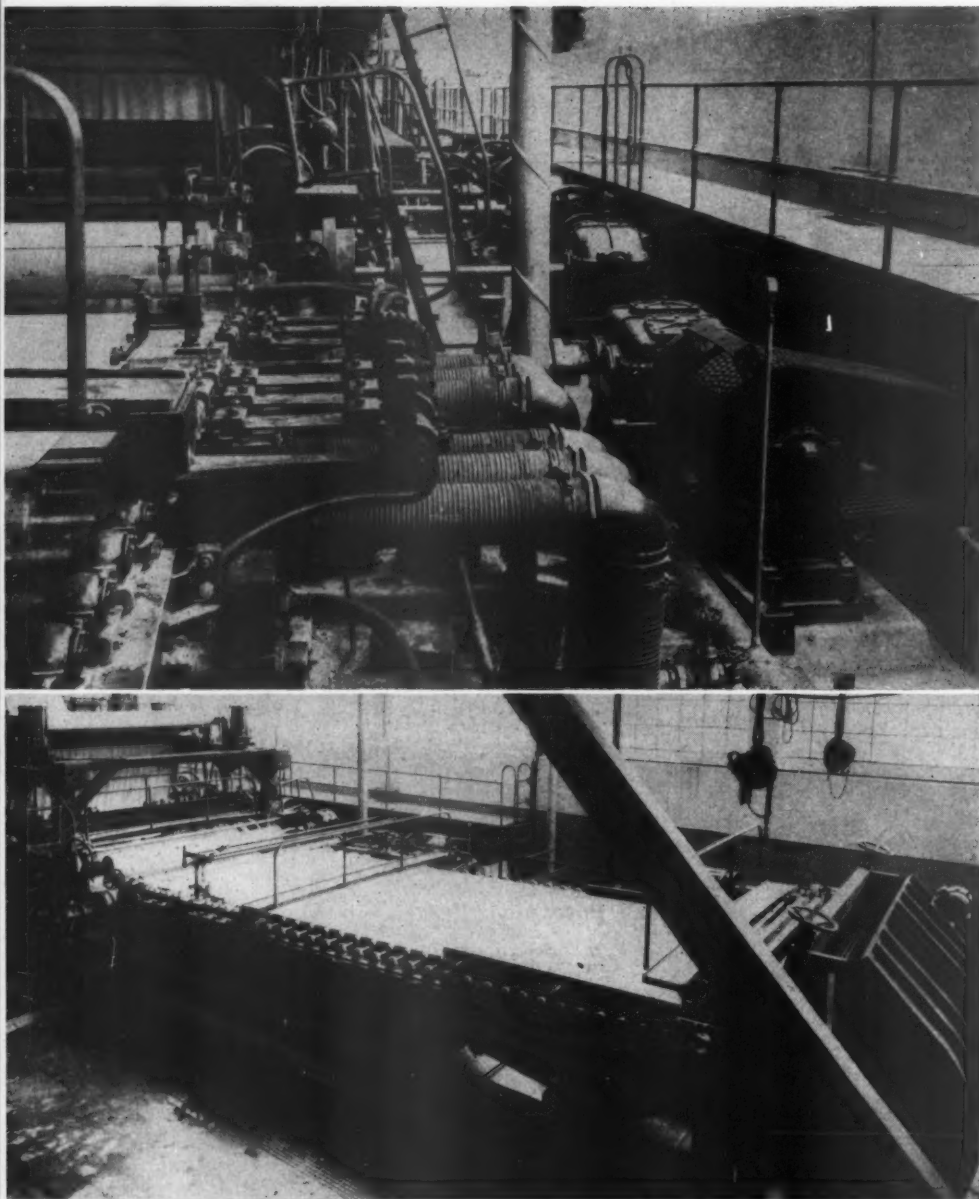
In this centennial year at Pusey Jones, it is a great satisfaction to serve old friends like San Rafael. This newest installation will supply Mexico with many grades of both M.F. and M.G. papers.

If you want to know what's new in paper-making equipment and what's on the boards for the future, write for the book, "A Trip Through the Pusey Jones Plant". It's yours for the asking.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery
Wilmington 99, Delaware, U. S. A.





TOP VIEW shows back side of new No. 10 machine at San Rafael mill. Printing papers and tissue and other grades will be made on this 132-inch Pusey & Jones. Here is shown Sandy Hill Iron & Brass Works V-belt, Tex rope, short-center drive which drives the new machine. All on floor level, it offers variable speed and safety advantages.

LOWER VIEW is front side of same new Pusey & Jones machine at the wet end, showing the Fourdrinier and its new Goldsmith Flow-Spreader, also supplied by Pusey & Jones. Another picture with this article shows the 14-ft. Yankee and dryer section.

tion with any paper mill on the continent. In this shop, machines for use in the paper mills of the United States have been manufactured and assembled.

Outstanding Features of The San Rafael Mills

Perhaps the outstanding feature of the San Rafael mills is what the Macorras call their "Central Stock Department" where nine kinds of pulp—groundwood, sulfite and kraft, including bleached and unbleached, semi-chemical, waste paper and rag pulps—are independently treated by seven different types of refining equipment, virtually every important type that is made.

San Rafael is almost as famous for its gravity flow system for conveying of wood, pulps and different kinds of water used in mill processes. At San Rafael, this possibly has eliminated the need for about 40 pumps and perhaps as much as 400 hp. Besides, in some places, only a kicker or starting pump is required.

Both these features—gravity flow and

the Central Stock Department—have been duplicated on a smaller scale at Progreso and Tlalnepantla. All of the mills are built on hillsides.

What seems to be a complicated maze of piping and canals, but is really an orderly and highly efficient system, gives the mills the chance for utmost flexibility and a wide range of paper furnishes the products.

An interesting feature of San Rafael is efficient conversion of energy from five waterfalls above the mill, with the result that the power development amounts to the equivalent of 2½ h.p. for every glass of water that comes down the mountain. However, the company must buy two-thirds of its power, and total power cost averages about ¾ of a cent per kw. hour, which is substantially above the cost in U.S. and Canada.

The San Rafael company has made a thorough-going study if its use of lubricants throughout its mills, with the result that it has complete schedules of the pres-

ures, types of oils, quantities, etc., suitable for every lubricant point. An executive of a big American oil company praised the system highly, saying that many U.S. mills of equal size are using twice as much lubricants.

In the use of paints, the San Rafael mill has also made a careful study of the kinds of paints to use in different rooms of varying temperatures, humidity, etc. Officials of the Detroit Graphite Co., 120 Broadway, New York, helped the mill in its program and they said they never saw a better paint manual prepared by any company anywhere. Also, the type of water, pulp or other fluid carried in every pipe in the mill is identified by color, the way that breweries or alcohol plants must identify their pipes under the law in the U.S. But no law made the Macorras institute this efficient system in their mills.

Likewise, the company has made a careful study and drawn up a complete mill plan for use of Johns-Manville and Garlock packings in machinery.

Another feature of the San Rafael company is the remarkable study it has made of belting. It has samples of every kind of belting it could possibly accumulate and it has complete records on the life duration, etc., of all kinds of belts used all over the plant—a total of 8,000 yards of belt being in use.

In its own shops it copied a Spanish style of belt made by Industria de Cuero Armado of Barcelona and persuaded an American firm, Schieren Company, of Bristol, Tennessee, to duplicate the belt for industries on this continent. This is a belt of leather strips which has lasted up to 20 years on San Rafael machines. End grain leather is used giving better friction and grip than face leather would and the leather is made in ½ to ¾ inch strips, so the space between strips prevents air cushions forming between belt and pulley.

In reviewing general practice at San Rafael, it should also be mentioned that the company has made exceptional use of International Business Machines equipment and methods for keeping records, with a check and double-check developed by the San Rafael company itself. A Mexican firm once sent a representative to New York to learn the I.B.M. methods and was told he could go back home and learn it from the best possible teachers at San Rafael. The late Jacob Kindleberger, former head of Kalamazoo Vegetable Parchment Co., lauded this system of accounts developed by Sr. Macorra as one of the finest he had ever seen anywhere.

The San Rafael Company keeps a cross-indexed record for five years and with trends indicated for the future for all

BOARD

GLASSINE

KRAFT
CONDENSER

NEWS

SULPHITE

COATED
BOOK
BROKE

GROUND
WOOD
SPECIALTIES

RAG

MATRIX
PAPERS

VERSATILITY



THE JONES *High Speed* REFINER

The remarkable versatility of the JONES High Speed Refiner is evidenced by its use in mills everywhere. The fillings are individually designed for successful operation on every type of paper stock from news to rag. Used for general utility purposes, they replace large units handling same volume, and afford many operating advantages and economies.

PROOF
REPEAT ORDERS
FROM
SAN RAFAEL

Jones

E. D. JONES & SONS COMPANY - PITTSFIELD, MASS.
Builders of Quality Machinery for Paper Mills

MANUFACTURERS AND DISTRIBUTORS IN CANADA WATERLOUS LTD., BRANTFORD, ONT.



HERE IS THE DE LA ROZA Continuous Digester, key installation in the San Rafael Mill's new kraft pulp plant. Pine chips and chemicals are fed into the far end (left) of the horizontal-type digester is 110 ft. long. There is an inner and outer cylinder, steam being used only between the walls of the two cylinders. A de la Roza pressure type of washer is at this end of the digester. For more details on process, see the article on this page.

operations, including cost and production figures. But they not only have these records—they also have a handy system of graphs worked out which gives the executive an opportunity for a quick check-up or review.

While on the general policies subject, it might also be well to mention that San Rafael has a map showing with pins where every accident happens in the mill, and it has developed a safety program as modern as any in the U.S., with intensive campaigns for safety twice a year with prizes offered. It likewise has a suggestion system for stimulating efficiency and production. There are quarterly and yearly prizes—top ones of about \$50.00.

San Rafael, like any Macorra-engineered mill, is a mighty pleasant place to visit, particularly in the high altitude, because the visitor doesn't have to do any climbing, but instead, works his way down through the departments from the top of the hill. Incidentally, there are nine trained engineers on the staff of the San Rafael mill—more than average for a mill of this size—most of them from the University of Mexico. At Progreso, there are three. Sugar industries draw many of the best engineers in Mexico, but the paper mills of San Rafael welcome them more than most Mexican industries do.

Starting at the top of the hill at San Rafael will be a new wood mill. The new wood mill and wood yard were being removed some distance from mill operations. The wood is cut in 2-ft. lengths, to facilitate handling in the mountains, and some

Joaquin de la Roza Long Interested in Cellulose

Joaquin de la Roza, Sr., and his son are at Belgrade 9, No. 1, Mexico, D. F., Mexico, where they assisted in installations of the new digester and auxiliary equipment at San Rafael, but the De La Roza Corp., has offices also at 106 Wall St., New York. Mr. de la Roza, Sr., was born in Matanzas, Cuba, in 1892 of Spanish parents, both of whom were educated in the U. S.

They sent him, at the age of 12, to Abbott School, Farmington, Maine, and to Cornell where he graduated in mechanical engineering, but also studied chemical engineering. He returned to Cuba as a sugar industry engineer because of his family's large sugar interests and he built some of the largest sugar mills in the world in Cuba.

His interest in producing cellulose from sugar cane bagasse led to his development of the continuous digester. Later he visualized its usefulness in processing of wood pulp, too, and, finally, the large 50-ton digester was built.

is barked in the woods, and trucked to the mill. Spruce costs \$27 a cord, but the pine for the kraft mill is to be \$18 to \$20 because it is plentiful and closer to the mill. Over 70 cords a day are used now, but with the kraft mill going the consumption will reach about 120 cords.

Two Fibre Making Processes U-bar revolving barking machines debark a large percentage of the wood. In the mill area, the wood is transported on a concrete waterway.

A new Murray multi-knife 96-inch chipper has been installed, with a new Westinghouse 350 hp. motor in the new mill and an older 84-inch chipper will also be used for added production. One of the Spanish-

type leather belts, as previously described, made of 20 end grain leather strips, of 6 on edge leather strips each, is in use on a flat pulley with one of these chippers and has been going strong nigh onto 20 years.

The new kraft mill is on high ground above the older portions of the mill. A conveyor lifts chips to the top of a big concrete cylindrical chip bin with a cone-like base, which has a screw feed at the bottom. A similar chip bin has been serving the sulfite mill and these are of original San Rafael design. They resemble the new big chip bins or silos of concrete developed recently on the Pacific Coast, except that the latter have a lower steel hopper and revolving plate feeder.

New Type of Digester

From the new chip mouth the chips for kraft pulp pass over a Merrick Feedo-weight which weighs the chips and feeds them at a predetermined rate, by weight, direct to the much-discussed De la Roza continuous digester. Also there is a Richardson scale to weigh the sulfate liquor and with hydraulic accumulators.

The continuous digester was invented by Joaquin de la Roza, Cuban-born U. S. citizen, a mechanical chemical engineer and graduate of Cornell University, class of 1916, and now a resident of New York. This digester is a horizontal cylinder 110 feet long and 57 inches in diameter, with an inner cylinder or pipe 48 inches in diameter. The inclined rotation keeps the chips moving in liquor through the inside cylinder. Steam is between walls of the two cylinders only, so that it is an indirect

are you having RIVET TROUBLE



O-KNI-CO-LOK dis-assembled. Ordinary slitter knife is in center. Note small button on the O-KNI-CO-LOK which fits into any rivet hole on slitter knives of this type.

ELIMINATE IT WITH O-KNI-CO-LOK

Only seconds are required to assemble or dis-assemble the new O-KNI-CO-LOK slitter! These two operations are completed by means of a spanner wrench.

The projecting button shown on the O-KNI-CO-LOK above, slips into any of the holes designed for all rivet type slitters. Knife is held firmly in place and locked to the shaft. Nut continues to tighten as assembly revolves.

Order your O-KNI-CO-LOK slitters today and save time and money. Immediate delivery!

Method and ease by which knife may be assembled. Eliminates all rivet trouble.

The **OHIO KNIFE Co.**, CINCINNATI, OHIO

12
THE OHIO KNIFE CO., CINCINNATI 23, OHIO
Gentlemen: Please send me without obligation specific data O-KNI-CO-LOK for Slitter Knives.

COMPANY _____

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cook. A full cook for kraft probably will require 2½ to 3½ hours.

The cooked chips then pass to a de la Roza 2-stage pressure type of washer and shredder, where the liquor is squeezed out of the stock, with 7,000 pounds per square inch pressure from hydraulic accumulators manufactured by the Baldwin Locomotive Works, and the stock is washed once before its temperature is dropped to atmospheric.

There will be additional washing supplied by a new Swenson-Nyman two-stage vacuum type washer which has been installed just beyond the de la Roza washers. To get the most clean pulp, the pulp will need to be passed through both washing systems.

Now, it is the contention of both the San Rafael engineers and Sr de la Roza that his digester will have its first really fair trial at San Rafael. The only other place the digester was tried was in Cuba, but the war forced a discontinuation of that project.

The San Rafael engineers expect that it will save chemicals and steam, which seems to be obviously indicated, and it will, of course, save labor.

Following the washers is the new screen room operating on a gravity system, a Bird Machine Co. Jonsson knotter, then riffles around the room, then Impco flat and centrifugal screens, and then Impco thickeners, each group in successive steps down to two below floor chests. Thickeners can be emptied into one chest, while the other is in use.

Old equipment (no other could be bought during the war) will be used in the kraft recovery plant until the company develops some production data and then one of the newest and latest recovery systems will be installed. Above the screen room and recovery plant is a Dorr classifier and causticizing system.

The operation of this new kraft mill will be of interest all over the continent.

Gravity Flow

Parallel to this new plant and also at the top of the hill is pulp and waste paper storage and two big pulpers—one for each fiber material. One of these is one of the first Dilts Hydrapulpers ever built, installed shortly after they were first introduced to the industry just prior to World War II. The rag and wire catching rope, of course, is used only in the waste paper pulper. The San Rafael mill used to store about a year's supply of purchased sulfite and kraft pulps, but now it has been able to keep only a few months ahead.

Waste paper pulp passes by gravity flow to a row of flat screens and classifiers and into a big stock chest, then to a Jones No. 1 pulper. There are two lines for conveying the two types of pulp waste and purchased pulp—into the Central Stock Department. There are also two 12-ton digesters in the company's own sulfite mill making unbleached sulfite usually with a 9 to 12-hour cook.

Also serving the Central Stock Department with pulp is the groundwood mill, which is almost parallel alongside these

ON OPPOSITE PAGE are pictures showing some of the units of the unique Central Stock Department at the San Rafael mill, where nine grades of pulp are independently treated by seven types of refining equipment—virtually every type made. This Central Stock Department, engineered by Gen. Mgr. Jose de la Macorra, Jr., is credited with saving power and labor, increasing the uniformity of pulps and giving the operations more flexibility.

1. Here is shown a seeming maze of piping in the circulating system which is key to independent treatments for pulp.
2. In one section of the Department are a pair of No. 1 E. D. Jones & Sons Refiners with cycling chest, used on small amounts of pulp.
3. A row of nine Morden Stock-Makers with 200 hp. General Electric drives, where about 80% of all stock is treated, regardless of other treatments given it.
4. A Bauer Bros. Pulper which processes sulfite and groundwood tailings.
5. A Sprout-Waldron refiner, driven by 300 hp. General Electric motor used on all kinds of pulp, but usually kraft. Several other types of pulpers and refiners are used.

operations near topside of the mill properties. There are 12-four pocket grinders, every two being driven by a 1000 hp. motor. Wood is kept under lock and key in storage here and is accurately measured out to each of the grinders, so an accurate check can be kept on consumption. A triple piping system permits sending of brown, white or fresh water into the grinders. There are two steel boilers bought in Germany which cook brown groundwood in four to six hours. It is really an imitation kraft, the lignin darkening the fiber during the cook. Here is where the brown water comes from.

Gravity flow is again the modus operandi in the Macorra-engineered groundwood plant, with step-downs from grinders to six Impco knotters, then a row of 12 Impco and Apnew screens. Here again, is a carefully laid out piping system to permit independent handling of brown or white types of groundwood, with four local chests leading into two main chests. Some groundwood is bleached with sodium hydrosulfite, and later the modern Dupont system will be used for peroxide bleaching of groundwood.

This pulp used in the mill and is diverted to the Central Stock Department, also.

Three wet machines make pulp lap for the Progreso mill.

Unique Central Stock Department

As we have stated, the Central Stock Department has been created at San Rafael to permit the treatment of each of several stocks independently. It is already credited with saving power and labor and with producing more uniform pulps. In this connection, it is well to remember the 90 different kinds of paper at San Rafael. Nine grades of pulp go into this department and they come out independently, regardless of which of the at least nine types of stock treatment are performed.

In one room, San Rafael has a row of nine Morden Stock-Makers with 200 hp. General Electric drives, and regardless of the other treatments that may be given, about 80% of all stock goes through these Mordens.

On that side of the room is also a Sprout-Waldron refiner, one of the newest of installations. It is driven by a 300 hp. G. E. motor. All kinds of pulps go through this Sprout-Waldron machine, too, kraft, sulfite, waste, groundwood of all grades, and the product generally is a good quality of poster paper. Usually it is kraft stock treated here.

Across the room are two more refining set-ups—facing each other. On one side is a Shartle-Dilts Cycling chest and Hy-

drafiner driven by a G. E. 200 hp. motor. On the other side is a pair of No. 1 E. D. Jones refiners with Cycling chest, each driven by a Westinghouse 50 hp. motor. The uses of the Jones and Shartle equipment are likewise as diverse as the pulps themselves, but usually for small amounts.

In another room near the groundwood equipment are three more pulping and refining machines.

There is a Bauer Brothers Pulper, in which a rotating and revolving disc mechanically makes pulp from sulfite chips from the knotters and also groundwood tailings. It has two 150 hp. built-in motor.

Then there is a Haug Refiner from New Hampshire, which takes chips from the knotters and saves materials by making a pulp generally used for wrap papers.

A Noble & Wood pulp mill with 800 hp. drive is next in this lineup and is used on any pulps, but mostly on kraft.

One or more of these set-ups may be used for treatment of any pulp and the system of piping is the key to independence of treatment for each of them. Much of the piping used throughout the mill is Johns-Manville Transite, made in Mexico.

But we are not yet through with the types of equipment for pulp preparation. In another room is an Asplund Defibrator and Chemipulper—the largest type that has been made—with six reaction cylindrical chambers. This makes a semi-chemical pulp which is used at San Rafael mainly for roofing or bag papers. There are also two Roll-O-Finers in this room supplied by Paper and Industrial Appliances, Inc., each driven by 200 hp. motors, and making pulp for bag paper principally. These machines have special appeal for uses on types of wood available in Mexico.

All pulps come into the Central Stock Department for check on consistency, hydration and freenes. In an auxiliary laboratory above these machines is special testing equipment including a small experimental Morden Stock-Maker and a Bauer Fractionator of four stages and four size meshes to measure fibers.

The Central Stock Department permits the San Rafael mill to use any pulp in any hydrating machine or any chest or on any paper machine as the pulps are passed down the hillside. Virtually all beaters have been taken out of the mill except a few used on broke which will be substituted later by a new type of U-shape vat beater with a specially shaped horizontal propeller blade. This beater, developed by the San Rafael engineers, is said to be more economical and will have some uses in the mill.

The San Rafael engineers are still not

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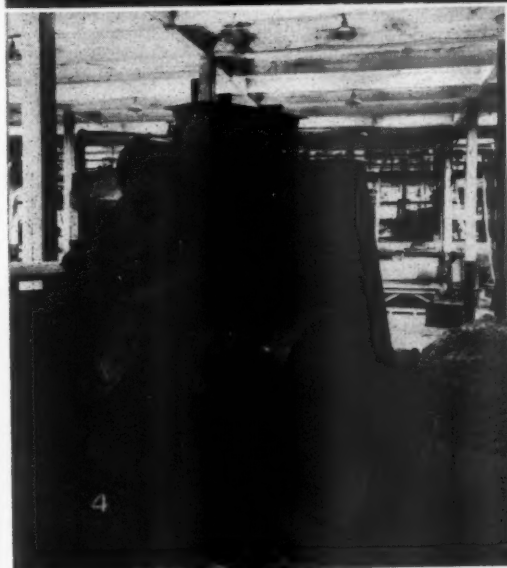
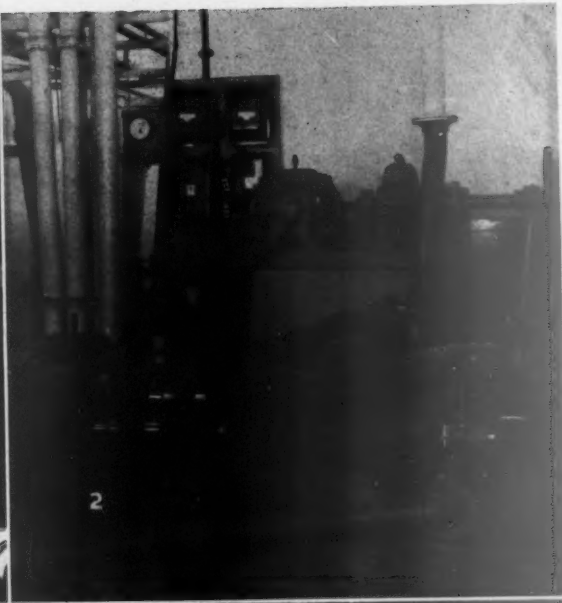
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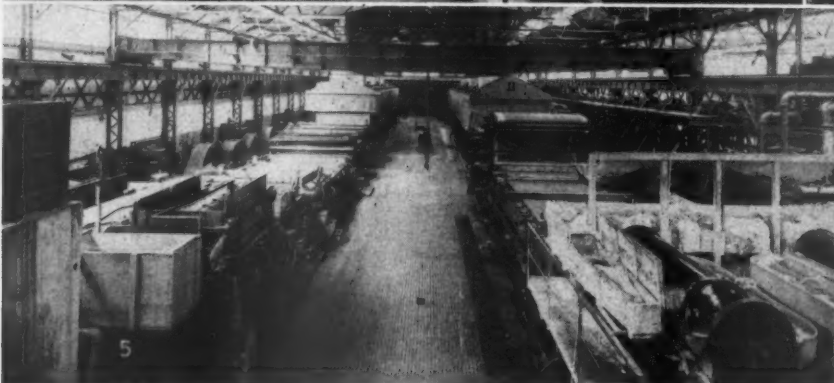
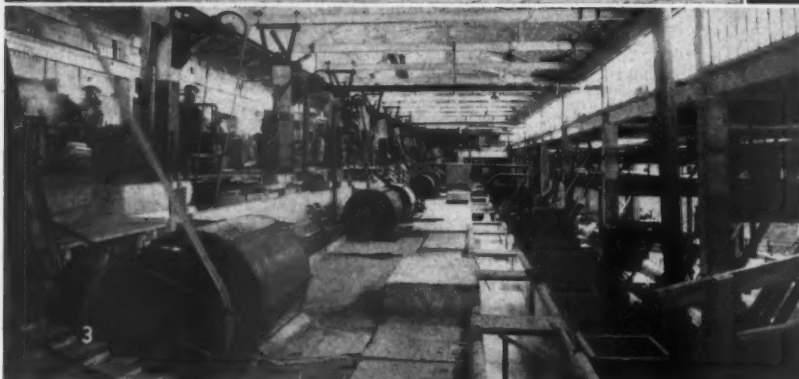
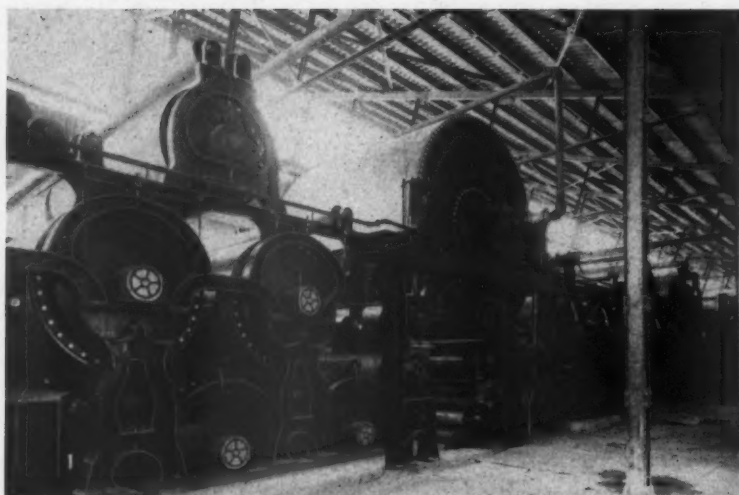
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PAPER





PICTURES AT SAN RAFAEL MILL BY PULP & PAPER:

1. Dryer section of new No. 10 Pusey & Jones 132-inch machine with 14-foot Yankee, shown here.
2. New Swenson-Nyman two-stage vacuum type washer which the de la Roza digesters and de la Roza washers. This is above screen room.
3. The groundwood mill. Gravity flow is modus operandi from grinders to Impco knotters to Impco screens.
4. At feed end of the de la Roza horizontal digester is the big cone-bottom

chip bin, then the Merrick Feedweight which weighs chips and feeds them at pre-determined rate direct to digester. Also kraft liquor scale and accumulators are here.

5. Here are No. 1 and No. 2 machines. San Rafael has ten machines now. Pusey & Jones Made No. 1, a 154-inch machine in 1912. It also made No. 3 and No. 10 at San Rafael and No. 3 at El Progreso mill.
6. This building is the General Manager's headquarters when he is at San Rafael and is equipped with accommodations for guests, etc. PULP & PAPER was present for a typical Mexican mid-day feast here.

making any hard-and-fast performance claims for their Central Stock Department. They have been keeping records on it for a year and a half. And they say that they will have to keep them for a year and a half longer before any definite statistics on performance can be accepted. But the advantages in general seem to have been demonstrated.

Eventually, this department is to have complete push-button control for central one-man operation of all the equipment and the incoming and outgoing flow of pulps. The company is studying these

control systems now.

There are nine pulp lines from this department to tiled lined measuring chests, then to mixing chests, where rosin, slum, clay or color are added, then to jordans, screens and consistency controls and to the ten paper machines.

The Ten Paper Machines

Equipment ahead of these ten machines varies. There are six E. D. Jones jordans and two Karlstad refiners and the screens are German, Swedish and British except for the newest machine which has

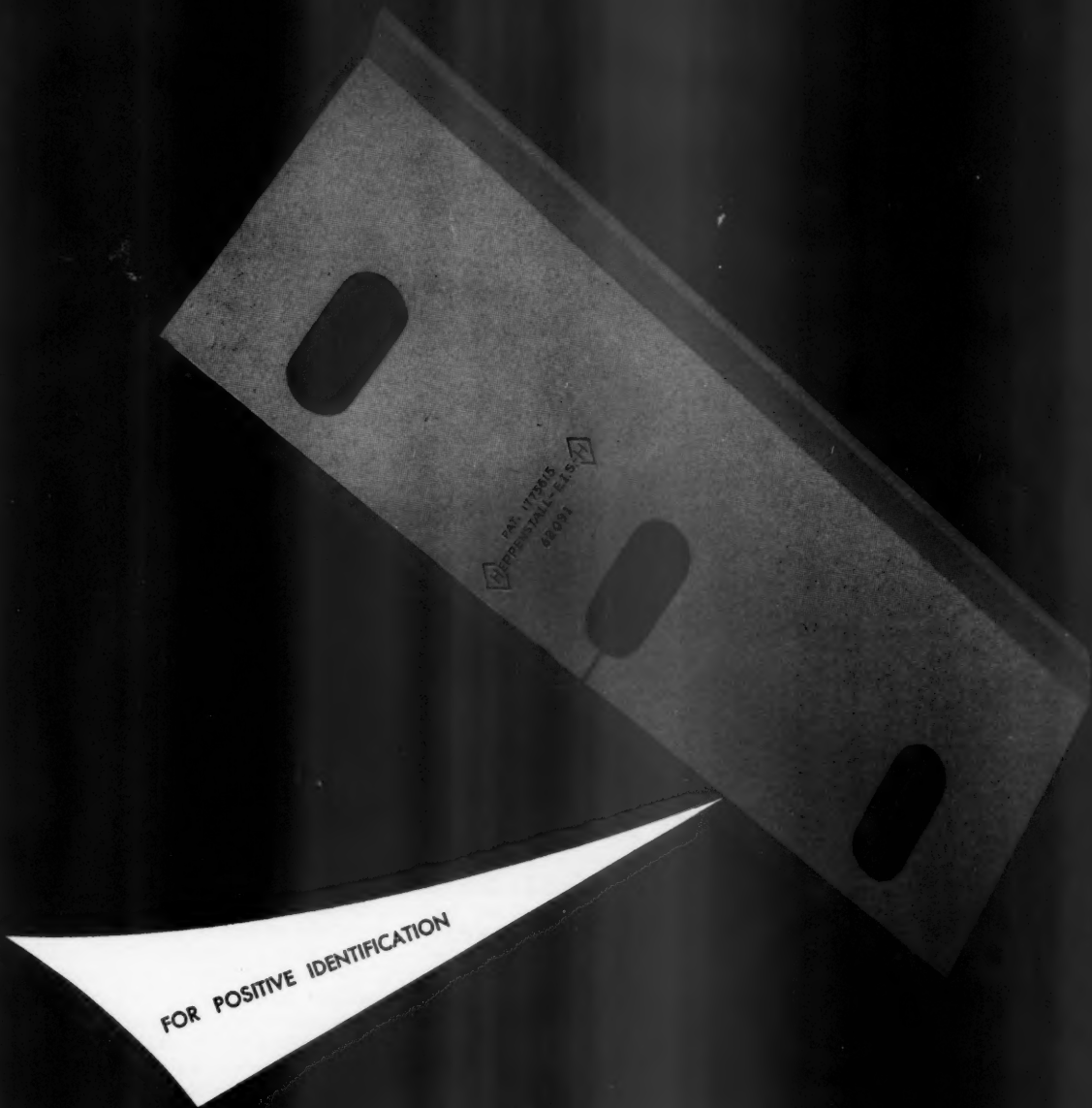
two Bird screens and the new Goldsmith Flow-Spreader supplied by Pusey and Jones, makers of this 132 inch machine.

Here are some of the features of the new, No. 10 machine at San Rafael:

The latest type Flow-Spreader, mentioned above, combined with adjustable high head nozzle slice, also double auxiliary straight slices.

Maximum speed of machine is 700 ft. per minute.

Fourdrinier part for wire is 75 ft. long equipped with suction couch roll, lump breaker roll, six 7-inch wide suction



HEPPENSTALL E. I. S. CHIPPER KNIVES *are now trimmed in* ***Green***

You'll notice the "new look" of Heppenstall Chipper Knives when you receive your next shipment. All edges, except the cutting edge, will be a bright "Kelly" green—for convenient identification. And there's no need to tell you that they're still the finest knives obtainable—you rely on that, and you helped to build their reputation.

Manufactured from our own electric induction steel, Heppenstall Chipper Knives actually retain keener edges longer . . . operate more hours between grinds . . . yield more, clean-cut, uniform chips. Order a set today!



HEPPENSTALL COMPANY • PITTSBURGH 1, PENNSYLVANIA

boxes, double dandy roll stands, Rapidrape wire changing device, and adjustable wire pitch arrangement.

Press part is of Simplex close-coupled design with rubber-covered suction first press, plain second press, and set of smoothing press rolls; second main press with reversed felt; water-marking device located between the two main presses.

Dryers are in two main sections having one upper and lower felt on each section with 12 ft. diameter M. G. Yankee dryer and intermediate smoothing press between the sections; first section comprises 14 paper and six felt dryers of 48 in. diameter; second section comprises 8 paper dryers of 60 in. diameter and two 48 inch felt dryers.

Bowser lubricating system serves main dryer bearings.

Rope carrier device threads the sheet through the dryer sections.

Last overhung paper dryer is Monel-covered suitable for water-cooling.

One 5-roll and one 7-roll stack of calenders have Bowser lubricating system in connection with all bearings and Vickery doctors for each roll.

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Two Bird screens, a Midwest-Fulton dryer drainage system, Nash suction pumps, and Allis-Chalmers stock pumps were furnished as part of the contract with Pusey & Jones.

All rolls with exception of 60 inch paper dryers and calender rolls equipped with roller bearings.

The machines range from 84 to 154 inches and they make from 10 to 50 tons each. Nine are Fourdriners and there is just one cylinder, a Beloit. Every kind of paper from book to multiwall bag and all colors are made. The Yankee on the new machine is the second, the first being an English Yankee and they will make toilet and wrap tissue. But a new supercalender is coming from France for the new machine, too, which will enable it to make high quality book paper. On-the-machine coating is a future possibility.

The second newest machine at San Rafael is the No. 2 Beloit of 144 inches (130 inch. trim) which took the place of an old one in 1930. No. 1, is a Pusey & Jones 156 inch (142 in. trim) installed in 1912 and still the biggest. No. 3 was installed in 1899. It is also a Pusey & Jones and is 132 inches wide (120 in. trim) a record in those days.

There are now five American, two Swiss, one German, one English and one home-made machine at San Rafael. The latter is a 60-inch machine for crepe specialties which is doing a good job.

Good quality book, a fine bogus Bristol and strong bag papers were among papers being made when this mill was visited.

Interesting equipment for the new Pusey & Jones is its Sandy Hill V-Belt, Tex rope, short center drive, all on the machine floor level, taking up comparatively little space and offering safety advantages, variable speed controls, etc. This is similar to the Sandy Hill drives installed in a number of Eastern U. S. mills. There is a chain belt drive for the 14-ft. Yankee.

Other San Rafael Equipment

The finishing room is 150 by 500 feet with a number of cutters and other equipment. There will be five supercalenders when the new one arrives. A bag plant with several machines is in another room.

A machine shop 300 by 80 feet is as modern and well equipped as the best you will see in the States. When visited by **PULP & PAPER**, the San Rafael machinists were casting an agitator, making a new flat screen, machining and making dryer gears and making railroad car wheels. The Company has its own 36-inch narrow gauge. The biggest tool in the machine shop is a 15-ft. lathe.

Warehouse space and loading platforms for trucks are on the next step down the hill. Most paper is trucked to Mexico City.

The company develops from 2,000 to 5,000 hp. of electrical power in dry to rainy season and buys about 9,000 hp. in dry season and 5,000 hp. other times. It generates about 2,000 hp. with two Babcock & Wilcox high pressure boilers. It has a 2500 kva. G. E. turbo-generator. It has three fuel tanks totalling 75,000 bbls. capacity. About 65,000 bbls. can be stored in a new one, much bigger than the other two.

The main substations are General Electric and Westinghouse of 6,600 volts and 440 volts. Every motor in the mill above 400 hp. is 6,000 volts wound to eliminate transmission losses at lower voltages. The San Rafael Company measures the amount of power used in each department as well as amounts lost in transmission.

Where pumps are in use, they are generally Warren and Allis Chalmers for pulp and Gould pumps for water.

The mill has greatly ameliorated its waste liquor problem by selling one-half of the sulfite liquor in concentrated form to 20 degrees Beaume to Mexican tanneries and refractories. It used to be used for road paving. The rest of the liquor goes in the mountain river which eventually sinks underground in this high section of Mexico.

Under Fernando Macorra, the general superintendent, the principal executives here are Jesus Escalante, a Spanish-born papermaker who is superintendent of production, and Felipe Vasquez, native Mexican who is personnel manager.

DESCRIPTION OF THE PROGRESO MILL

Fabrica de Papel "El Progreso Industrial" is a small edition of San Rafael, the principal pulp and paper mill of the Compania de las Fabricas de Papel de San Rafael y Anexas, S. A.

But as Mexican mills go, El Progreso is hardly a small mill—it makes 50 to 70 tons daily of printing and fine papers on two machines. Whereas San Rafael might be called the "volume" mill of the San Rafael company, El Progreso could be called the "quality" mill.

It is sole support of some 2,500 residents of the town, El Progreso, which is

part of the Villa Nicolas Romero, 25 miles northwest of Mexico City. The entire town of El Progreso is owned by the company, as in San Rafael, with homes rent-free for the employees and theater, school, stores and other community buildings and residences all superior in appearance to those found in most towns. It is corn country around Progreso, and many of the workers also have little farms, where they raise the Indian maize.

El Progreso is about 60 miles north of San Rafael, which is an item of consideration because some of the sulfite and groundwood and rag pulps made at the big San Rafael mill are trucked to the smaller plant for use with purchased United States or Swedish bleached and unbleached sulfite and kraft (bleached) pulp and with waste paper in making colored bond, book, ledger, offset, litho and coated papers.

A newly rebuilt paper machine with considerable new and modern equipment was installed at El Progreso last year.

This is a Bagley & Sewall 110-inch machine with a Pusey & Jones Goldsmith type inlet designed for even distribution of stock to the machine and elimination of flocculation. The Sandy Hill short-center V-belt drive serves this machine, with drive equipment all on the same level as the machine.

The other machine in operation at El Progreso is a Pusey & Jones 100-inch machine.

Perhaps the most interesting feature about the El Progreso mill is the way in which each stock is treated independently, in the same manner that this is done at San Rafael. El Progreso has nine stock chests for treated stock and nine chests for untreated stock and any type of stock can be sent to any chest or to either machine as desired, through a similar ingenious system of piping as is in use at San Rafael, a system developed by Don Jose de la Macorra II, general manager of both operations.

In similar style to San Rafael, Sr. Macorra has also devised a very extensive gravity flow system of transporting pulp, stock and other materials at El Progreso, taking full advantage of the location of the mill on a hillside.

A third feature of El Progreso is a recent development and that is the virtual elimination of beaters in favor of continuous flow pulp preparation. Four new Morden Stock-Makers and two E. D. Jones No. 1 Refiners are largely responsible for this change. There are also three mixers. They are driven by General Electric motors.

Up the hillside, there is a 12-ft. Agnew pulper, then E. D. Jones pulpers with Falk reducers, ahead of the flow of pulp to the nine untreated chests. From here all the different kinds of pulp go to the Morden's and Jones' refiners, but each one independently, and then to the treated chests, of which there are also nine, as previously noted. From here stock goes to the mixers, where color and broke are added, and then to jordans and consistency regulators ahead of each machine.

(Continued on page 54)



**Drive Installation
Similar to That in
San Rafael Mill**

Sandy Hill

SELECTIVE DRIVE

Insures Unvarying Draw Between Sections

Savings in belt costs through longer belt life.

Greatly reduced maintenance costs.

Requires no basement or mezzanine; saves floor space.

Save cost of structural steel for supporting line shafts or cost of piers.

Permits installation of relatively smaller line shaft with antifriction bearings for power savings.

Fine draw regulation, exact draw maintenance—those indispensable requirements of paper machine operators—are assured by this new achievement of Sandy Hill engineers. Combines simplicity of design with trouble-free operation, power-saving economy, safety and low first cost.

Unvarying draw between sections is provided through Sandy Hill's particular design involving effective use of V-belt and sheaves. There is no detect-

able slippage in the V-belt feature of the drive, and the speed regulation made possible by the variable pitch V-belt sheaves is beyond the range of other mechanical combinations. Gives twice the draw range of the cone pulley and flat belt.

Sandy Hill Selective Drive can reduce operating costs for you. Write for circular showing drawings and explaining construction details.



Sandy Hill Iron & Brass Works

Hudson Falls, N. Y.

Machinists and Founders Specializing in Paper and Pulp Mill Machinery

MANUFACTURERS OF
Adjustable Cylinder Vats
Cylinder Paper Machines
Pulp Grinders
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Pulpers or Kneaders, Voith
Thickeners
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Bertrams Flow Distributors
Bertrams Shakes

Neilson Slice
Feltless Wet Machines
"Selective" and Corner Drives
Fourdrinier Paper Machines
"Packer" Screens

Castings
Bleaching Equipment
Schofield Felt Conditioners
Cleveland Type Bearings
Shaker Screens

JULY, 1948

51

*The Continuous Digester**

Selected as a model

For

Lower Cost

Higher Quality

Uniform

Kraft Pulp



At **SAN RAFAEL, MEXICO**

mor unit



To PRODUCE—Uniform, Stronger, Cleaner, Brighter, Better Pulp.

To SAVE—Wood, Chemicals, Fuel, Labor and Capital.

EFFICIENTLY:—

Through

UNIFORM;

1. Hydraulic Pressure Equalizing of the Water Content of the Wood Chips, at 50% oven-dry basis.
2. Accurate Control and Proportioning of the Weights of Wood Chips and Liquor Charged to the Digester.
3. Complete, Hydraulic Pressure Impregnating of the Wood Chips (Including Knots and Bark if present) with Warm Liquor Before Subjecting the Chips to a Temperature above 100°C.
4. Complete Mixing and Heating of the Pre-Impregnated Wood Chips and Liquor in the Digesting Chamber, and Accurate Control of the Temperature of the Entire Charge in the Chamber During Digestion.
5. Accurate Control of the Digesting Time.
6. Non-Explosive, Non-Cutting, Low Temperature, Hydraulic Pressure, Digested Stock Discharging.
7. Complete, Hydraulic Pressure, Minimum Dilution, Counter-Current, Digesting Temperature (Maximum Solubility) Spent Liquor Removal and Pulp Washing.
8. Counter-Current, Indirect, Steam Heating and Heat Recovery.
9. Hydraulic Pressure Dissolving of Incrustants.
10. Reduced Total Pulp Mill Capital Investment.

**Obtainable only with
The Continuous Digester***

* Protected by U. S. Patents Nos. 1,991,243; 1,991,244; 1,991,245; 2,011,799; 2,063,367; 2,063,368; 2,067,480; 2,072,086; 2,159,258; 2,364,133; 2,392,123; 2,398,135; 2,399,472; 2,410,964; 2,427,446; 2,427,662, and other U. S. and Foreign Patents and Patent Applications—

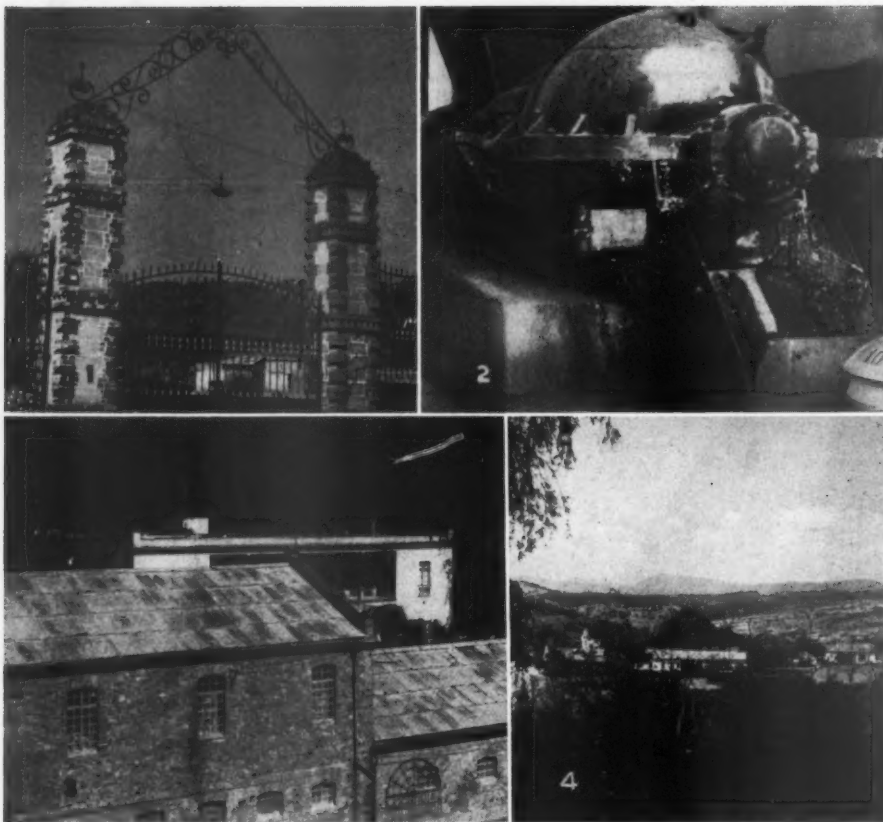
de la Roza Corporation ENGINEERS

CONTINUOUS PULP PROCESSING

66 Wall Street

New York City

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THESE PICTURES WERE TAKEN BY PULP & PAPER at "El Progreso Industrial"—the little brother mill to the big San Rafael operations. El Progreso is northwest of Mexico City, makes 50-70 tons of paper daily.

1. Wrought iron entrance gate at El Progreso. This gate was done especially for the company in Barcelona, Spain, and fine iron grill work and light standards were made by Barcelona iron workers for the mill at San Rafael, too.
2. E. D. Jones & Sons Pulper, operating at consistencies up to 15% or 20% where desired. Light is so strong in Mexico it was possible for PULP & PAPER editor to take this interior at 1/50 sec.
3. Administrator of El Progreso mill lives in white building in grove of trees beyond this mill building. It is common practice in Mexico for owners or administrators to live on mill grounds.
4. View of company-built town of El Progreso from mill. It has many more features for good living than average town of this size—with theater, sports fields, modern school, etc.

Foxboro controls are used in the machine room.

After the paper machines are five supercalenders, all of European make obtained prior to World War II except for the biggest one, a 124-inch wide Jos. Eck & Sohne machine which came from Dusseldorf, Germany, by way of England, with a British motor drive up to 825 r.p.m. It was installed last year.

Alongside the machine is a cellar formerly for moisture treatment after supercalendering, but now Spraco moisture treatment is used for supercalendering and folding department, so—like in the case of the eliminated beaters—here is more space saved in the plant.

In the coating department there is a Waldron machine among several coaters. Brush coating system is used, and festoon drying is practiced. There are two big cutters and several small cutters in the finishing room.

The plant has two Combustion Engineering boilers. Here as in other Mexican mills, the operators must cope with a dry season. Oil fuel supplements the electric power generated by the company's own electric plant. But water power is a very small portion of power

during the dry season, when farmers are taking heavily from available supply for irrigation.

Usually, this mill will run for two or three weeks on similar weights or kinds of paper if possible, but it has to make a great variety of coated, color and fine papers.

There are three-way bonuses for employees in this mill, too, on department efficiency, company efficiency and percentage of profits, and there are yearly and quarterly prizes for suggestions.

El Progreso has an unusually good safety record, although the Mexicans usually scorn gloves, safety shoes and other precautions as "sissy." Perhaps this is because the mill is so roomy and there is so much space around machines. Also they do pay attention to the safety signs with pictures, such as a skull and bones, like on the ancient Indian monuments.

Richard Clapperton, whose family is well known in the paper industry in Great Britain, is production superintendent; Aage M. Leth, a young Dane, is assistant superintendent, and Mario Jaimes de la Vega is technical supervisor and shift foreman.

A mill was built at this site in 1900 by

Don Alberto Lenz, who now has two mills of his own in Mexico, and it was purchased in 1905 by the San Rafael company, then headed by Jose de la Macorra I. The mill today has no resemblance to the original plant as there have been so many changes and improvements made by the Macorras.

Latin America to Develop Forest Resources

Virgin forests of Latin America, covering over 2,000 million acres of land, are one of the world's few remaining reservoirs of wood. This enormous timber wealth is made up of a very great variety of species. Despite this wealth, Latin America today imports twice as much wood products as it exports. But in the next decade this situation would be reversed as a result of a program being formulated by 21 countries that participated in the recent Latin American Forestry Conference at Teresopolis, Brazil.

The first specialized forestry conference held in the history of Latin America, it was called by the Food and Agriculture Organization of the U. N. The role of FAO in this program was seen as providing a continuous flow of counsel and technical advice and as encouraging capital investments from both private and public sources. Success depends on the ability of Latin American nations to obtain the machinery and other equipment, delegates said.

Charity Organization Buys Itself a Mill

In one of the most unusual transactions in the history of the industry, the former owners of Paper Corp. of America, 350 Fifth Ave., New York City, have sold to the Juvenile Service League, Inc., 150 West 85th Street, New York, all of the stock in the corporation and the League is now the owner.

Joseph Dannenberg, attorney and president of the League, with offices at 25 West 43rd St., verified the sale upon inquiry by PULP & PAPER. He said that the League is a charitable corporation organized under the laws of New York State and has been in operation for many years. It owns and operates Juvenile House in the Bronx, as well as a child care center there, and also a camp at West Hurley, N. Y. It is a non-sectarian organization whose purpose is the prevention of juvenile delinquency.

Paper Corp. (page 29, Aug. 1947 issue) purchased the stock of the Tegefors mill at Hjarpen, Sweden, and in 1944 bought the Amoskeag Paper Mills at Manchester, N. H. Its basic mill was the old North American Pulp & Paper Co. mill at Cheboygan, Michigan. One observer put the amount involved in all three transactions as between "\$8- and \$10,000,000." The League transaction, however, does not include the Swedish mill which is still owned by former owners of Paper Corp. of which Robert LeRoy is president.

Paper Product Pointers FROM CYANAMID



Re: Wider Markets for Paper...

New PAREZ Resin 611 Imparts Water Resistance To Starch-Pigment Paper Coatings

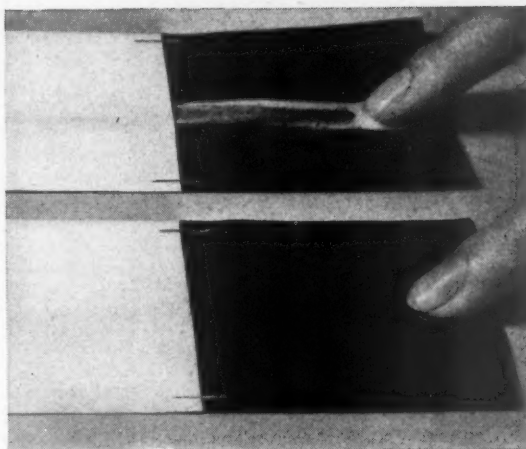
The desire for improved wet-rub resistance in starch-pigment paper coatings has been met by Cyanamid's new PAREZ Resin 611, a melamine-formaldehyde resin which, to date, has given exceptional results in extensive commercial field runs.

This dry white powder may readily be incorporated into the paper coating by any one of several methods including the addition of the dry resin to the starch before or after cooking, and the addition in water solution to the finished coating color.

Some of the significant advantages of PAREZ Resin 611 are:

- Good solubility or dispersibility
- Fewer viscosity problems
- Smooth uncalendered coatings
- Formaldehyde fumes greatly reduced
- High wet-rub efficiency at low resin content
- Brightness of coated paper is appreciably better than that of untreated sheets
- Good aging stability of wet-rub resistance of coatings
- Easy to handle, excellent storage stability

PAREZ Resin 611 is the result of persistent Cyanamid research which is constantly seeking to improve the quality of paper, thereby opening up new markets to



Test shown above illustrates wet-rub resistance of starch-pigment coating treated with PAREZ Resin 611. Note how coating on bottom sheet, to which resin has been added, remains rub-proof, while untreated coating on upper sheet rubs off.

the paper-maker. PAREZ† Resin 607, the melamine resin that imparts wet strength to paper, is another of the many chemicals developed for this purpose.

For full information on PAREZ Resin 611, send for Technical Bulletin No. 19.

ALWAX* Sizes • WAXINE* Sizes • Resin Size • PAREZ* Resins
Synthetic Resins • Casein • Alum • Sulfonated Oils • Fillers
Defoamers • Soda Ash • Caustic Soda • Salt Cake • Acids • Clays
AEROSOL* Wetting Agents • CAL MICRO** (Calcium Carbonate) and
other Paper Chemicals. For low-cost chemical equivalent of distilled H₂O
... FILT-R-STIL* Demineralizing Units. *Reg. U. S. Pat. Off. **Trade-mark

†Trade-mark of American Cyanamid Company covering its synthetic
resins for use by the paper industry. The process under which PAREZ
is applied in the production of wet-strength paper are covered by
U. S. Patents Nos. 2,291,079, 2,291,080 and 2,343,543 and U. S. Patent
Application Serial No. 453,032.

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in Canada: Canadian Cyanamid Co. Ltd., Montreal and Toronto



**American
Cyanamid Company**
Industrial Chemicals Division

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Hudson's Florida Mill

A NEW QUALITY KRAFT PRODUCER

In late October, 1947, the Southern Division of Hudson Pulp & Paper Corp. at Palatka, Fla., began to produce paper, thereby assuring its position as "first" in the post-war trend of new mill construction in the South.

This project, the first entirely new plant started, also was first completed after the war in the South. Ground was broken Dec. 1, 1945, when **PULP & PAPER** published the first story on the project.

As originally announced, the project was to be a 50,000-ton per year mill costing \$6,000,000. At its conclusion, while pyramiding post-war costs had increased the investment, the mill started producing at 175 tons per day.

A paper mill had long been talked of at Palatka, so Hudson experienced a warm reception; found a most excellently located site in respect to housing and transportation. Located but a few short miles from Putnam County's courthouse, the 50-acre fenced-in mill site proper is part of a 450-acre tract situated on Rice Creek, a St. Johns River tributary, yielding water transportation to the mill itself through a short company canal.

The mill structure contains 260,000 square feet (on 130,000 square feet of ground) and its brick curtain walls resting on piling supported concrete foundations enclose an ordered streamlined production layout. The machine room itself, which measures 69 feet wide by 342 feet long, has ample daylight illumination, a condition typical of the entire mill. Wherever practical, artificial illumination is from fluorescent lighting; otherwise from incandescent sources.

The company controls a substantial acreage of forest land, and pulpwood from this and from purchases comes into an efficiently laid-out yard of minimum 8,000-cord capacity. This provides adequately for receipt by both rail and truck, and there is no part that cannot be served by crane.

A Stephens-Adamson horizontal steel conveyor with loading skirt is flanked by a railroad track for direct unloading and delivering up an inclined section to a 12x45-foot Fibre Making Processes (Inc.) barking drum. After debarking the pulpwood drops onto a sorting conveyor where it is water sprayed, or returned for re-barking. The prepared wood is delivered from the end of this sorting conveyor directly into one 88-in. 10-knife Carthage chipper, which is driven by a Westinghouse motor through a B. F. Goodrich Multicord belt; thence onto Carthage vibrating chip screens; and by a Redler type conveyor into three tile ground storage



WILLIAM MAZER, left, Vice-President of Hudson Pulp & Paper Co.; A. M. LUND, right, Vice-President in Charge of Manufacturing.

silos 27-ft. diameter by 46-ft. high, which give a 24-hour storage capacity. These chip silos were built by Merritt-Chapman & Scott Corp. from Kalamazoo Tile.

Rejects from the chip screens are returned to a Waterville Iron Works re-chipper. Sawdust and other refuse is carried by Link-Belt conveyor to the bark burning boiler.

Pulp Mill

Chips are delivered from the ground storage bin to the digesters with a double Redler type conveyor. Four welded Chicago Bridge & Iron Co. steel digesters are provided. Each has 3320 cubic feet capacity (10 tons per blow) providing for five-hour cooks. Indirect heaters with stainless steel tubes have been provided for each digester. Liquor is removed from the digester at a point just above the junction of the cone and the vertical sections and then proportionally redistributed through special nozzles at both top and bottom of the digesters. The process is completely controlled by Mason-Neilan Regulator Co. instrumentation. Automatic relief discharge is provided in conjunction with a relief condenser, decanter, and storage for the turpentine extracted.

The steam from each digester blow passes through a separating cyclone; thence through a heat reclaiming system. The condensation is used for heating clean, incoming wash water. The blow valves were furnished by Fibre Making Processes, Inc.

Vibrating type Jonsson pre-knotters, furnished by Bird Machine Co. are placed ahead of the washers to attain economy. Improved Paper Machinery Corp. has furnished the three 8x10-foot vacuum type closed counter current washers located, with the pre-knotter and an IMPCO consistency regulator and meter, at the same elevation as the digester room operating floor. The entire washing operation is

under automatic control of a Mason-Neilan instrument installation. The washers are provided with hoods for the removal of vapors. A hand operated crane has been installed above the washers, and a small elevator serves both digester and wash room floors.

Drop legs deliver from the washer to 20-ft. high vertical liquor tanks at ground level. Their diameters are: Strong liquor, 35-ft.; intermediate, 27-ft.; weak liquor, 25-ft. Foam is collected into a 15x45-foot-high tank after passing through breakers. From this tank black liquor soap is removed at relatively low concentration, combined with the steam evaporator feed, and then removed between the effects of this unit for delivery to a skimming tank. Excess liquor is processed in the evaporators.

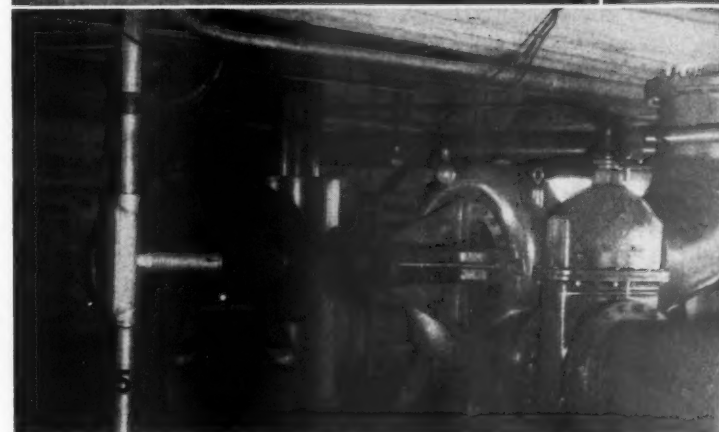
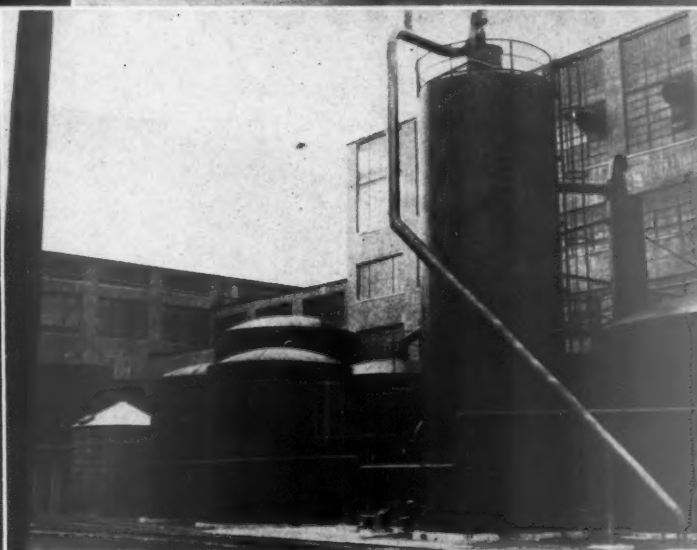
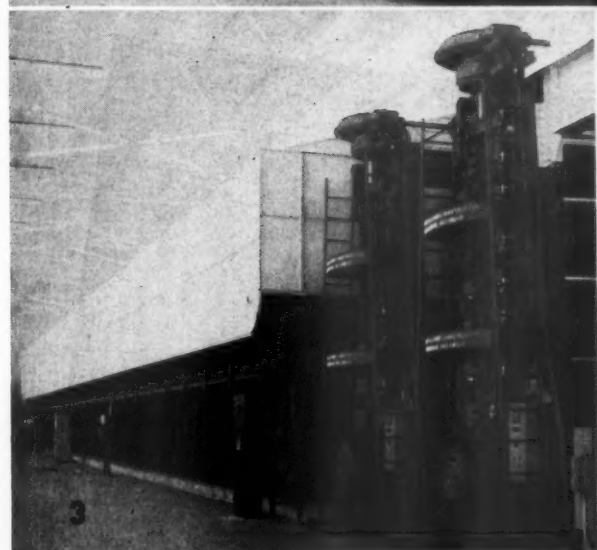
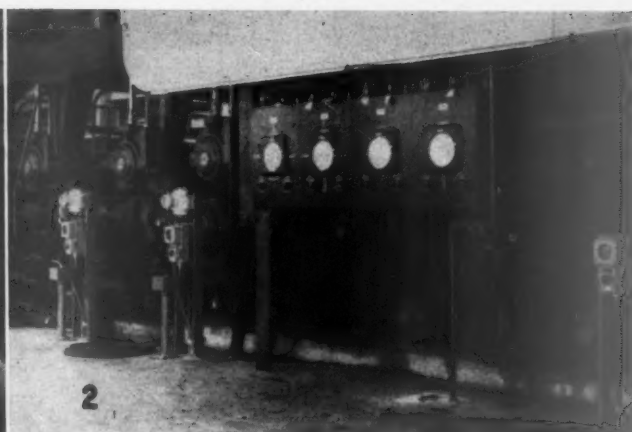
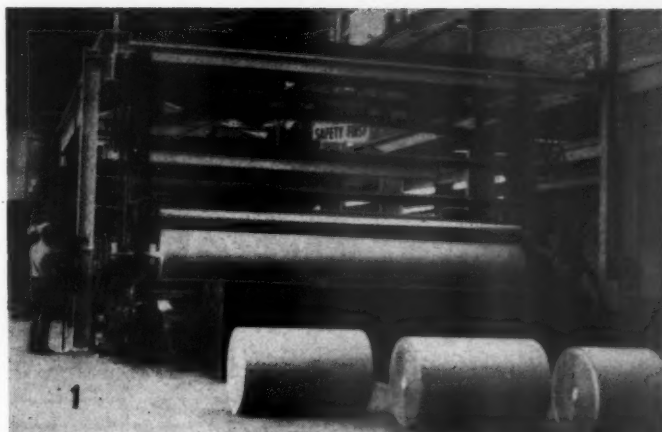
Washed stock is discharged by gravity into a 15-ton capacity concrete storage chest equipped with Noble & Wood propeller type agitators. From this stock chest the pulp goes to a mixing box for combining with white water; then discharged through two primary centrifugal type IMPCO screens, and one tailings screen made by Trimbey Machine Works. Stock then flows by gravity into an 8x12-ft. IMPCO vacuum type thickener, which uses white water returned from the paper machine. The thickened stock goes to a 20-ton capacity concrete storage chest at 4% consistency. Propeller agitation here also is Noble & Wood.

White water from the thickener is discharged through a drop leg into a concrete storage tank under the washed stock chest from which it is recirculated.

Refining of stock is effected with seven Noble & Wood Mammoth Jr. Type D jordans driven by 300-hp. Westinghouse motors at 450 rpm. Five of these are used as primary and two for finishing. Hydrated stock from the primary jordans discharges into either of two 15-ton (each) concrete storage chests. The arrangement is such that one of these chests may be used for broke. A Trimbey Machine Works consistency regulator is placed ahead of the jordans and a Trimbey proportioning meter ahead of the paper machine. Size is introduced in the pump suction ahead of the finishing jordans; alum in the fan pump suction. Size is delivered in liquid form with adequate storage provided. Facilities are provided for receiving either dry or liquid alum. The liquid alum system was furnished by General Chemical Co. The refining room is served by a 5-ton overhead crane.

The Worthington Pump & Machinery Co. Mix-Flo fan pump provides 14,000

(Cont. on page 61 — photos on page 57)



HUDSON PULP AND PAPER CORP. EQUIPMENT:

1—Cameron Type 20 winder is a 2-drum, 10-slit unit with handling facilitated by mechanical ejector and unloading device, the elevator of which is shown in up position here.

2—Mason-Neilan instrumentation shown here is loading panel for all wet end presses, front and back-side. Gauges are (left to right) lumpbreaker, first press roll, second press roll, smoothing press. Also shown are some General Electric manual controls.

3—Pusey & Jones Fourdrinier machine (234-inch) is suitable for high production with speeds to 1400 ft. per minute. The two 8-roll calender stacks are outfitted with self-aligning water cooled babbitt bearings at bottom; with forced lubrication roller bearings elsewhere.

4—On skeleton steel structure affixed to building is turpentine (turpene) installation. Hot gases, under Mason-Neilan instrument control pass from top to bottom through decanter and condenser. In this picture: Blow tank; 15x45 ft. high foam tank; 35x02 ft. high strong liquor tank; 27x20 ft. high intermediate liquor tank; 25x20 ft. high weak liquor tank.

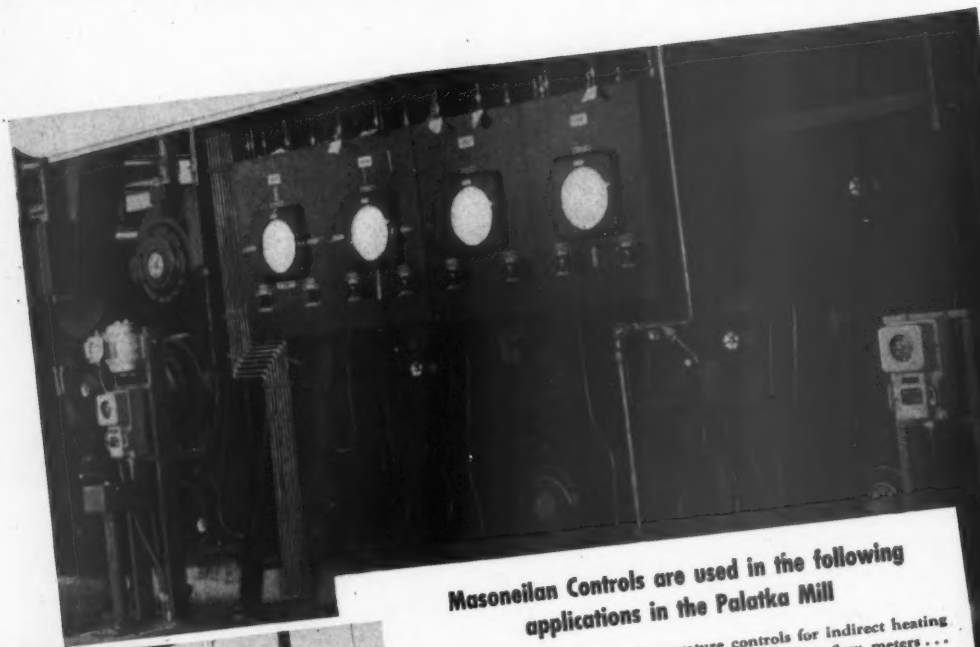
5—150-hp. Reliance Electric & Engineering Co. driven Worthington fan pump has a 14,000 gpm. capacity at 580 rpm. A Chapman gate valve stands between pump and headbox.

6—Main paper machine drive is new General Electric multiple generator electric installation; balance of machine has variable speed sectionalized motor drive. Power is provided by two 700-hp. motor generator sets. Dryer sections are driven by GE 250-hp., 1150 to 153.3-rpm. motors.

Hudson Pulp & Paper Corporation's

NEW PALATKA PLANT GETS

Masoneilan Process



Masoneilan Controls are used in the following applications in the Palatka Mill

Digester Room. Time-cycle temperature controls for indirect heating with forced circulation . . . Steam flow to digesters—flow meters . . . Digester gas relief and automatic blowback controls . . . Automatic liquor charging controls.

Washing and Screen Room. Blow tank, Head box, Liquor tanks, Foam tank, Washed stock, (level instruments) . . . Intermediate black liquor tank, Wash liquor evaporator flow recorder . . . Wash liquor evaporator flow recorder . . . Wash water flow recorder . . . Hot water temperature controls . . . Steam to hot water heater—pressure reducing station.

Stock Preparation Room. Screened stock chest level recorder . . . Refined stock chest level recorder.

Evaporator Room. Steam to first effect—flow control . . . Black liquor to fifth effect—flow recorder . . . Concentrated black liquor storage tank—level recorder.

Recovery Room. Black liquor to precipitator dissolving tank—flow recorder . . . Precipitator dissolving tank level control.

Machine Room. Dryers—complete automatic temperature control . . . Rolls—pneumatic roll loading controls on first and second presses, smoothing press and lump breaker.

Above — Masoneilan roll loading controls for wet end presses.

Left — Time-cycle digester temperature controls, also automatic gas relief and blowback controls — for two digesters.

UNIFORM QUALITY OF PRODUCTS WITH

Control Equipment

The Hudson Pulp & Paper Corporation's new post-war pulp and paper mill at Palatka, Florida, is producing 175 tons of paper daily.

To insure rigid control of quality, Hudson Pulp & Paper Corporation relies on Mason-eilan Process Control equipment. Of especial interest to other pulp and paper manufacturers is the fact that the Mason-eilan instruments were preassembled at the factory and shipped

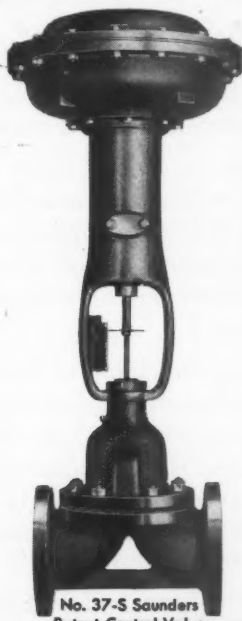
mounted and completely piped up on "packaged" panel sections. The matched panel sections assured centralized control and simplified installation.

If you are planning on building a new mill... plant expansion or modernization, it will pay you to use Masoneilan Process Control Equipment either in "packaged" panel assemblies or as individual units.

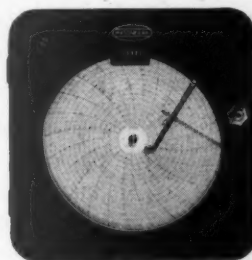
OTHER MASONEILAN EQUIPMENT USED IN THE MILL



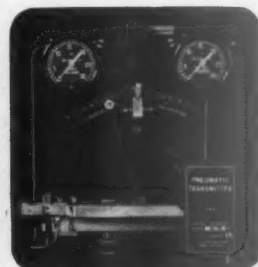
No. 38 Percentage V-Port Control Valve



No. 37-S Saunders Patent Control Valve



Model 2010 Level Recorder



Model 12620 Displacement-Type Level Pneumatic Transmitter, Interior



Model 12600 Displacement-Type Level Controller

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CENTENNIAL SPOTLIGHT 1848-1948

In this 100th anniversary year as Machine Builders for the Paper Industry, Pusey Jones points with pride to outstanding post-war installations. In the spotlight . . . 154" Fourdrinier Facial Tissue Machine for Groveton Papers Co., Groveton, N. H.

PAPER FILLER FOR AIRPORT RUNWAYS

(NEWS ITEM: More than 4,000 miles of joints on airport runways have been sealed with a new paper cord and rubber compound.)

A new development which uses paper cord as a base promises to end the problem of sealing joints on airport runways. Combined with rubber, this new filler is applied by a special machine. Cracks are dammed with paper cord and then sealed with a rubber compound. Expansion and contraction of concrete which forces asphalt out of joints, holds no threat for this new filler. It may soon be used on traffic highways. We will gladly supply manufacturer's name on request.

Auto seat covers made of paper . . . clotheslines made of paper . . . recording tape made of paper . . . new uses for paper calling for new standards of lightness and toughness, new standards of quality in performance. New responsibilities — new opportunities for the Pulp and Paper Industry.

The Pusey Jones Organization is now devoting itself completely to the design and construction of Paper-Making Machinery built to new high standards of speed and efficiency, and to the modernization of existing machines. Additional capacity in Metals Fabrication is now available through conversion of facilities formerly devoted to the building of ships.

Pusey Jones Engineers will welcome the opportunity to work with you in solving production problems.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery
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gallons of stock per minute to the machine at 580 rpm. It is driven by an 150-hp. Reliance Electric & Engineering Co. motor.

Paper Machine

The 234-inch high speed Pusey & Jones Fourdrinier kraft paper machine is of the most modern type, arranged for speeds up to 1400 feet per minute, producing from 25 to 110 pound basis weights. It is equipped with a flow spreader with 120-in. high slice. The wire is 100 ft. long, arranged for installing from the tending aisle without removal of the Fourdrinier proper. The breast roll is 28 in. in diameter; table rolls, 10½ inches. There are eight 7-inch suction boxes; a 40-inch suction couch roll. A duplex type two units shake, with a range of from 85 to 500 strokes per minute, is provided.

The press part has two sections, each with a 30-inch rubber covered upper roll and a 36-inch rubber covered suction type lower roll. All are connected with a pneumatic-type loading system for distributing the weight on the bottom rolls. They are mounted in heavy duty roller bearings.

The smoothing press, which has 30-inch upper and lower rolls, is between the second main press and the first lower dryer. It also has automatic loading, roller bearings, and oscillating doctor.

The dryers are in two sections, each with an upper and lower felt. The first section has 22 60-inch paper dryers and four 60-inch felt dryers; the second section, 22 60-inch paper dryers and two 60-inch felt dryers. Felt conditioners were provided by Bird Machine Co.

The driving train is fully enclosed with all dryers and the lower tier of each section horizontally connected together by intermediate idler gears which, in turn, drive the upper dryers by means of idler pinions, all arranged for lubrication from a central Bowser, Inc., system.

There are two 8-roll calender stacks. Four rolls of the second stack are bored and fitted for steam or water connections. The bottom bearings are self-aligning water cooled babbitt. The others are improved roller bearings. Lubrication is by pressure feed oiling. Levers and weights apply pressure to the journals at the top of the rolls.

The main driving drum of the uniform speed type reel is 42-inch diameter with four 12½-inch reeling drums.

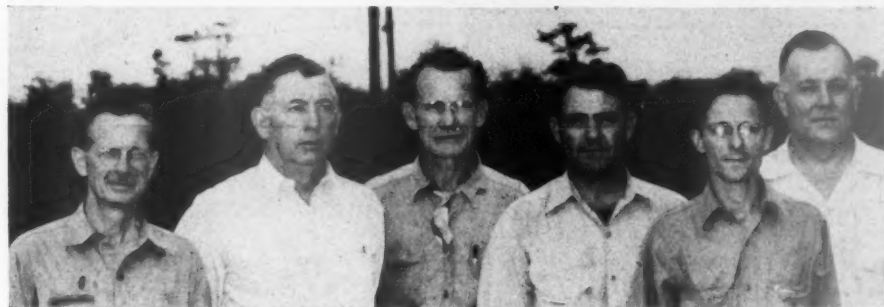
The Cameron Machine Co. furnished a 2-drum, uniform speed winder that takes up to 60-inch diameter rolls. Equipment includes ten slitter units and a mechanical ejecting and unloading device. The winder is driven by a General Electric VS type (125-KW MG set) adjustable DC motor. It provides a paper winding speed of 3000 ft. per minute. The gears for machine and winder were furnished by Farrel-Birmingham.

A sectionalized General Electric electrically controlled variable speed drive is provided for the paper machine, with a multiple unit for the Fourdrinier and individual generator driven units for the sections and presses. Current is obtained from two 700-hp. 80% PF generator sets.



PERSONNEL AT HUDSON PULP & PAPER CO. Top row, l. to r.: SAM SIEGEL, Resident Manager; C. W. WRIGHT, Power Supt.; W. L. SINGLETARY, Night Supt.; JACK R. BUSH, Chief Accountant; L. J. HEBERT, Night Supt.; B. J. SANFORD, Gum Take Dept. Manager; H. M. SHIRLEY, Wood Procurement Manager.

Bottom row, l. to r.: E. A. HARPER, Pulp Mill Supt.; J. L. RICHARDSON, General Supt.; JESSE J. D'ARCEY, Master Mechanic; ROTH N. POE, Chief Electrician; C. L. BLONDHEIM, Chief Chemist; W. L. JONES, Paper Mill Supt.



Air conditioning and removal of vapor from the machine room is effected by a J. O. Ross Engineering Co. transite hood over the dryer section, with five Sturtevant exhaust fans and accompanying heater and supply fans for air make-up. Eighteen-inch vacuum on the flat boxes, suction couch and presses is provided by seven Nash Engineering Co. vacuum pumps aggregating 715 hp.

The condensate return system was furnished by Midwest-Fulton Machine Co.; the lubrication system by Bowser, Inc. A Worthington Pump & Machinery Co. unit furnishes compressed air directly to the machine. Instrumentation of the paper machine is by Mason Neilan Regulator Co. with all panels coming fully enclosed and completely mounted ready for tie-in. The paper machine is serviced by a 30-ton Whiting Corp. electrically operated crane that moves the entire length of the machine room and has two 15-ton trolleys. A 10-inch crane handles rolls from reel to winder. A 2000-lb. capacity broke beater is provided.

The roll grinder is a Lobdell Co. Type GVH and it is serviced from the machine room by a 15-ton crane.

Recovery

Black liquor recovered from the washing operation is stored in three tanks, two being 20x20 feet; the third 26x30 feet high. From there it is pumped continuously to a quintuplet, long tube, black liquor Swenson Evaporator Co. evaporator which receives it at 16% solids and discharges it at from 50% to 55% to two concentrated liquor storage tanks, one 14x24 feet; the other 20x24 feet. It then goes to a Cascade type evaporator thence to a Babcock & Wilcox Co. recovery boiler of 480,000 pounds of solids per day capacity generating steam at 420 psi, 725°.

The gases from the recovery boiler pass

through a Koppels (Inc.) precipitator before discharge to the atmosphere. The salt cake recovered from the precipitator goes to a tank for mixing with weak black liquor; then returned to the disc evaporator.

Make-up salt cake is handled by a pneumatic system from railroad cars into a storage room, and thence as needed it is mixed with black liquor and fed into the recovery unit.

In keeping with advanced post-war trends, advantage is taken of the favorable warm climate to place the Swenson multi-effect evaporator entirely in the open, adjoining the recovery building. Protection is provided exclusively by weatherproof insulation. The recovery building itself, following the same modern trend, has a canopy effect in its upper levels to provide a positive means of exhausting objectionable vapors.

The Mason-Neilan centralized automatic control for both recovery unit and evaporator is placed inside the building.

The smelt from the recovery unit is mixed with the recovered weak liquor from the subsequent Dorr Co. continuous recausticizing operation to form green liquor which is pumped into a 20x20 storage tank. Before using the green liquor in the causticizing operation, it is clarified in tow trays and the dregs resulting washed for the recovery of soda in four tray type thickeners. These two operations are conducted in a 30x36-foot tank composed of the six trays.

The clarified (white) liquor is combined with reburnt and new lime in a Dorrco slaker with a classifier for removal of grit. The resulting milk of lime is pumped to three elevated causticizing tanks, 10x8 feet high, arranged in series. They discharge by gravity into two tray clarifier and four mud washer trays combined into



HUDSON'S NEW EQUIPMENT:

Upper left—Instrumentation furnished by Mason-Neilan regulator for No. 1 and No. 2 digesters. In left panel, gas-off control-temperature-pressure relation controllers which efficiently relieve gases from digester, supported by automatic screen blow-back. Second panel (from left) contains time-cycle temperature control for steam input, of cooking cycle, controls steam to indirect process installation. These two panels are duplicated for No. 2 digester. On far right is diaphragm in steam line to heater. A second panel set furnishes complete control for liquor charging. A third, duplicates digester controls for No. 3 and No. 4.

Upper right—IMPCO vacuum filter is triple stage (8x10) closed counter current unit located at same elevation as the digester room operating floor. It is driven by Reliance Electric & Engineering motor and is preceded in line by an IMPCO consistency and metering regulator. Full instrument control is provided by Mason-Neilan and a hood carries away vapors.

Lower left—A Link-Belt conveyor carries bark, sawdust and other refuse from chip preparations to the bark-burning boiler.

Lower right—Vibrating type Bird Machine Co. Jonsson pre-knotters are placed ahead of the washers to attain economy in washing.

a 32x36-foot-high tank. The clarified white liquor from this unit goes to two 20x20-foot storage tanks, until needed for the digesters.

The sludge finally resulting goes to 20x10-foot-high storage tank and final single tray thickener, then directly to a 200-foot long 7-foot inside diameter oil fired Traylor Engineering & Mfg. Co. lime kiln. A pneumatic handling system

will pass the relatively small amount of make-up lime purchased from railroad cars into a storage tank.

The Dorr continuous causticizing operation controls are located in an enclosed room near the slaker.

The pneumatic salt cake and lime handling systems were furnished by The Brady Conveyors Corp.

Power Plant

The power plant has three units, the boiler and turbine rooms being located in adjacent buildings, with the recovery room connected by a passageway and auxiliary equipment building.

In the boiler room are two oil-fired power boilers, each of 70,000 pounds of steam capacity per hour and a third boiler,

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similar, but with the addition of a Hofft bark burning furnace. The boilers operate with steam at the superheater outlet of 450 psi and 750° F total temperature, and a feed water temperature of 270° F.

The connecting building between the turbine and recovery rooms houses a 500,000-pound-per-hour horizontal type, deaerating Cochrane heater and two centrifugal Warren Steam Co. boiler feed pumps, one motor and one steam driven. The exhaust steam from the latter delivers into the feed water heater. Also in this building is the feed water chemical treating equipment.

There is one 7500 KW double extraction condensing type General Electric turbo generator with steam automatically extracted at 150 psi and 50 psi. It serves the first or primary electrical distribution system of 4160 volts, 3-phase, 60-cycle, supplying direct motors of 200 HP and larger. The Westinghouse condenser is of 5000 square foot surface two-pass, divided water box type.

The turbine room also houses an Ingersoll-Rand air compressor for mill supply. There is a 10-ton crane in this building.

The radial type primary distribution has its control (with generator controls) placed in totally enclosed, metal clad switchgear located in the turbine room. Outgoing circuits corresponding to manufacturing departments radiate from the switchgear to strategically placed control rooms wherein are located the unit type of substations and motor starting equipment.

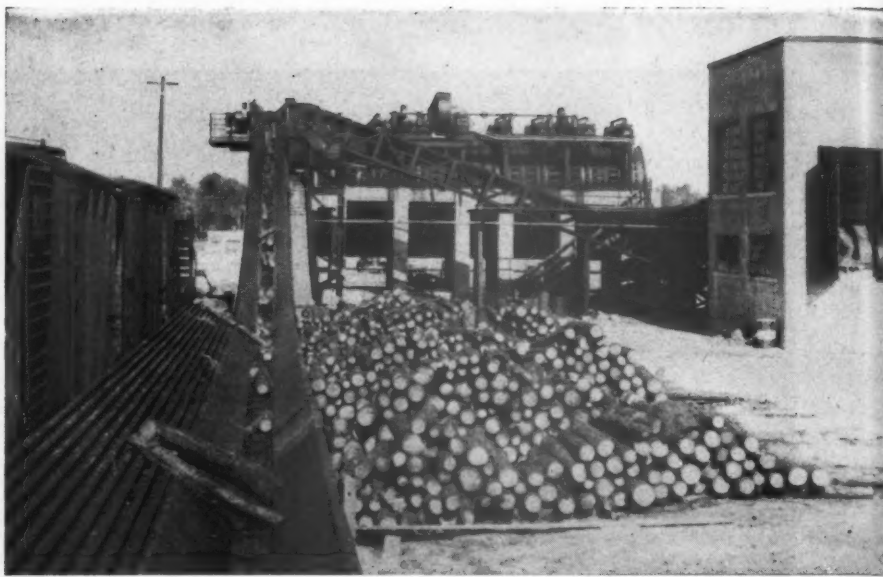
The transformer and secondary (440-volt, 30-phase, 60-cycle) distribution controls are combined into load center unit substations wherein the transformer and control equipment are close coupled and all interconnections wholly enclosed.

In general, full voltage magnetic starters are used throughout. Those for the 4160-volt motors have air break contacts and are fitted with high interruption capacity current limiting fuses in self-supporting steel enclosures. The 440-volt motor starters are of the air circuit breaker magnetic combination type, several of which are grouped together in steel cabinets as a motor control center. Both the high voltage and low voltage starters are placed either on the same room with the load center unit substation or in adjacent rooms. Thus all of this equipment is kept out of the manufacturing areas. Remote control push button stations are placed at each machine for the operators to start and stop the motors.

Provision has been made for outside power connection to provide current for maintenance purposes and necessary pumps during non-operating hours.

Water for condenser cooling is taken from the dock site by three 300 GPM centrifugal pumps. Fire protection water is drawn at the same point by two 1000 GPM centrifugal pumps and a 100,000 gallon elevated water tank provided by Chicago Bridge & Iron Co. connects with an underground loop system of mains.

Located also in the pump house are two 3000 GPM pumps that handle process water. At times this water comes via a



FIBRE-MAKING PROCESSES barking drum at Hudson Pulp & Paper Corp. Southern Division. While equipped with an efficiently laid-out minimum capacity, 8,000 cord yard, much pulpwood received is unloaded directly into the Stephens-Adamson conveyor. This picture shows conveyor and its steel unloading skirt. The barking drum is 12x45 ft.

2½-mile long 20-inch diameter pipe line from Etonia Creek, otherwise it might be drawn at the mill site.

Provision has been made for a future filter plant when a bleach plant is installed. The entire mill lay-out is designed to permit its being doubled.

General Information

The main office building is of Spanish architectural style, and measures 100x40 feet. A separate clock house, first aid and personnel building (74x25 feet) is nearby. Ample parking space is provided and while visitors have ready access to these structures, employees also reach them as readily from the mill side.

Plans for the mill were developed by J. E. Sirrine Company, Greenville, S. C., and A. M. Lund of the Hudson Pulp & Paper Corp., with D. G. Moon as principal consulting engineer and John H. Bringham, Jr., as resident engineer.

The general construction contract was executed by Merritt-Chapman and Scott Corp., New York City, with M. C. McGough, vice president in charge of industrial operations; L. V. Forbeck as general superintendent, and T. W. Wommack as chief engineer.

The Hudson Pulp and Paper Corp. was founded in 1896 by its president, Abraham Mazer. Its general offices are located at 220 E. 42nd St., New York City. Other company officers include: Jacob Mazer, executive vice president; William Mazer, vice president; A. M. Lund, vice president in charge of production; Joseph M. Mazer, treasurer; and Sam A. Lopin, secretary.

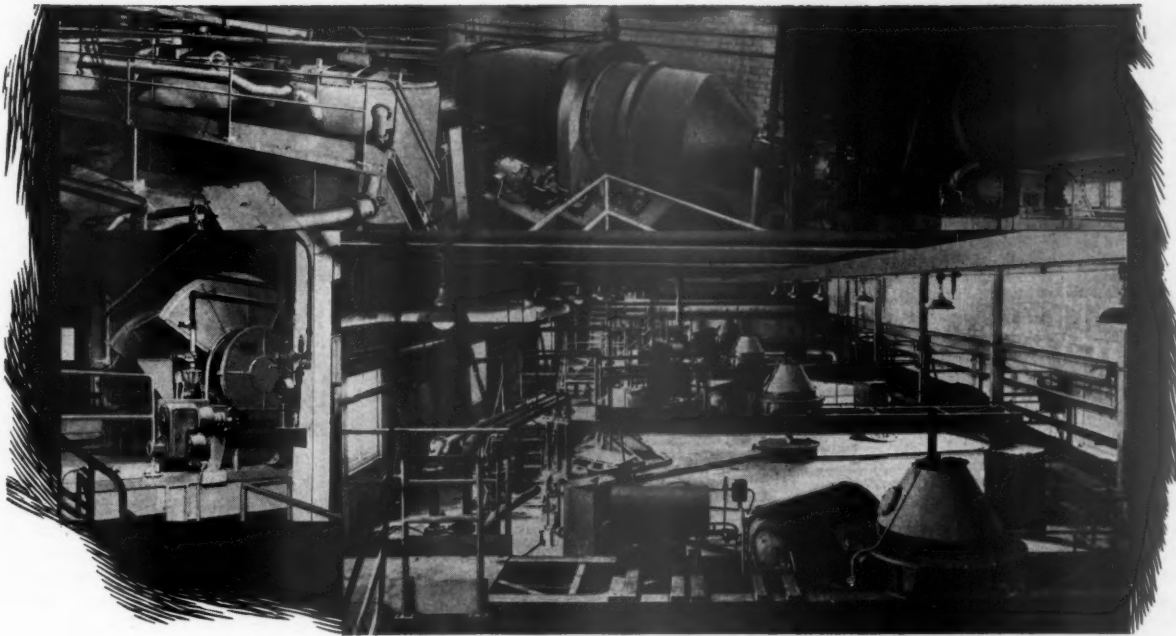
Operations of the company include the Kennebec Pulp & Paper Division, Augusta, Maine; Moore & Thompson Division, Bellows Falls, Vt.; and Mazer Paper Division, Lansdowne, Pa. The company produces kraft paper, gum tape, paper towels, paper napkins, and toilet tissue.

The new Southern Division at Palatka produces high grade kraft, wrapping, gumming and bag with facilities for converting it to finished product. For this purpose a two-story building measuring 324 feet in length and 152 feet in width was erected extending directly from the winder end of the paper machine room. The space is adequate for a full conversion operation.

Celebration Brings Many Guests to Lufkin Mill

Guests at a celebration marking the startup of the new high-speed newsprint machine at Southland Paper Mills in Lufkin, Texas, included Abe Cooper and Allen Hyer, of Bagley & Sewall; J. S. Scheuerman and Thomas N. Carter, of Cameron Machine Co.; J. E. Waterhouse of Montague Machine Co.; F. F. Frothingham, Bird Machine Co.; J. H. O'Connell, consultant; C. E. Noble, of Improved Paper Machine Co.; Frank Denison and J. L. Van Nort of Reliance Electric & Engineering Co.; I. T. Hockaday, Sam Olsen and P. R. Butler, of General Electric Co.; T. G. Kelley, of Goulds Pumps; Palmer G. Greene, of Cutler-Hammer; W. R. Crute (Texas), division manager, Champion Paper & Fibre Co.; George R. Brown and Herman Brown, of Brown & Root, Inc.; W. L. Phillips, of Houston, Texas; L. B. Janett, of New York; W. B. Clayton, H. A. White, E. C. Wise, and Frank Carter, of Dallas, Texas, and W. J. Krebs of PULP & PAPER, New Orleans.

The welcoming group included Ernest L. Kurth, president; Richard W. Wortham, Jr., executive vice president; W. L. McHale, vice president and general manager; K. W. Cooke, secretary-treasurer, and the mill's department heads. Following the mill ceremonies, the party were guests for a barbecue supper at Piney Ridge Lodge, deep in the timbered hills, with the East Texas industrialists participating.



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- Cleaner white liquor to digesters.
- Lower soda losses.
- Better lime kiln operation.

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Raymond S. Hatch Retires

Succeeded by Harold Bialkowsky

Under the retirement plan of the Weyerhaeuser Timber Co., Raymond Stewart Hatch who for the past 15 years has been director of research of the pulp division, will retire as of Aug. 1, and will be succeeded in that position by his present associate director, Dr. H. W. Bialkowsky.

Mr. Hatch whose 65th birthday is July 18, has pioneered a number of important processes and developments in the pulp industry in an industrial research career extending over 44 years. He told **PULP & PAPER** that his health is fine, and that he has no intention of taking up a life of idleness. He is considering going into pulp and paper mill consulting work and he and Mrs. Hatch will continue to live at 158 24th Avenue, Longview, Wash.

Mr. Hatch was one of the leaders in the development of the magnesia base sulfite pulp cooking and recovery process now just going into commercial production at the Weyerhaeuser sulfite mill in Longview, and he was especially concerned with the chemical engineering phases of that development.

Two decades ago, with his laboratory in Kalamazoo, Mich., he perfected the chlorination process for sulfite and kraft and pioneered the multi-stage chlorination-high density methods of bleaching in general use today.

He was prominent in the original developments in strength testing of pulp and in viscosity determination. In his 15 years with Weyerhaeuser, his research was chiefly concerned with the cooking of West Coast wood species by both the sulfite and kraft processes as well as bleaching and purification of pulps.

Mr. Hatch was national president of TAPPI in 1919-20 and in 1915 was one of the founders of that organization.

Mr. Hatch's Career

Born in Watertown, N. Y., he obtained a b.s. degree at Syracuse University in 1904 and then spent a year as assistant to the head of the organic chemistry department at Massachusetts Institute of Technology. In 1905, he became chemist for Ozone Vanillin Co. of Niagara Falls, N. Y.; three years later became superintendent and research chemist in dye-stuffs for Heller & Merz Co., Newark, N. Y., and after three years there, joined Crocker-McElwain Co. of Holyoke, Mass., where he served as paper mill chemist and general superintendent over a period of seven years.

There followed five years as manager of manufacturing at Hammersley Mfg. Co., waxed and greaseproof paper mill at Garfield, N. J., and during the next few years he was with the old Peerless Paper Co., in Dayton, O., later moved to Chillicothe, O., as a division of Mead Corp., with American Filter Co. and East Hartford Mfg. Co., Burnside, Conn.

His pioneering work in bleaching began in 1927 when he joined Pulp Bleaching Co., of East Orange, N. J., as vice president and took charge of its laboratory in Kalamazoo. In 1933, two years after R. B. Wolf of Pulp Bleaching Co. joined Weyerhaeuser Timber Co. as manager of their new Pulp Division, Mr. Hatch was chosen by him to be director of research.



RAYMOND S. HATCH (left), who retires Aug. 1 as Director of Research, Pulp Division, Weyerhaeuser Timber Co., under that company's retirement plan. DR. H. W. BIALKOWSKY (right), his successor.



Mr. Hatch has a son, Frank R., associated with Shell Oil Co., in San Francisco, and a step-son, L. K. Rudell, with the American Telephone & Telegraph Co. in Los Angeles, so it is very likely Mr. and Mrs. Hatch, to whom he was married about a year ago, will remain somewhere on the Pacific Coast should they later depart from Longview.

Dr. Bialkowsky Will Move

Dr. Bialkowsky, who has been associate research director of the Pulp Division in charge of coordinating research and operations, will move to Longview from his present lakeside home near Everett, Wash., but will retain possession of that home. He was born in Holyoke, Mass., Dec. 1, 1906, and is an MIT graduate of 1928. He was one of the first two students in the Institute of Paper Chemistry in Appleton,

Wis., when Dr. Otto Kress founded the institute in 1930, following two years with American Writing Paper Corp., Holyoke, Mass. After three years at the Institute, he was awarded a doctor's degree in the first graduating class.

He spent eight years with Gilbert Paper Co., Menasha, Wis., as chief chemist, and joined Weyerhaeuser in 1941 as technical director of the Everett pulp mill. He is married and has two children.

The pulp research laboratory, which he will head, is located in Longview, employs about 15 chemists, physicists, and other scientific personnel. The laboratory is fully equipped for all types of experimental and research work on pulping. The facilities recently have been modernized and enlarged to handle many problems involved in complete forest utilization as they relate to the pulping processes. This department does all the research work for the Pulp Division's mills at Everett and Longview and the new mill being built at Springfield, Ore.

Expansion at Bastrop And At Spring Hill

Tax exemption for a ten-year period was granted by the Louisiana Department of Commerce and Industry to the Consolidated Chemical Industries, Inc., to cover an addition to its plant at Bastrop, La., which involved a capital investment of \$50,000 and provides employment for six persons.

A similar exemption was extended the same corporation in the amount of \$245,100 covering a new chemical plant in connection with paper making at Springhill, La. This plant will create employment for fifteen persons.

These two operations are associated with the paper mills in Bastrop and Springhill of International Paper Co.'s Southern kraft division.

AT RANCHO DON LUGO, near Chino, Calif., more than 100 members of the Paper Makers and Associates of Southern California, with wives and sweethearts, enjoyed a "Wino-Dino" on June 3. Before driving to the romantic old rancho for dinner and dancing, the group first stopped at Pomona to enjoy a personally-conducted tour of Fernstrom Paper Mill's new No. 3 mill, with President F. O. Fernstrom and Jack E. Maurer, Vice President, acting as official hosts. As speaker at the dinner, Mr. Fernstrom expressed full confidence in the continuing development of the papermaking and converting industry in Southern California. PASC members at the dinner:

Top Row—l. to r.: Mrs. Bruce Brown, Jr.; Mr. Brown (Fibreboard Products), Chairman of PASC; Mr. and Mrs. Robert A. Baum (Fernstrom); Mr. and Mrs. D. W. Curtis (Fernstrom).

Middle Row—l. to r.: Miss Jean Fielding; L. I. Miller (Flintkote Co.); J. E. Maurer; Mrs. Jack Rhodes, F. O. Fernstrom, speaker of the evening; Mr. Jack Rhodes (Fernstrom).

Bottom Row—l. to r.: Mr. and Mrs. James Turek, Jr.; Mrs. and Mrs. Charles Frampton (he has retired); Mr. and Mrs. W. C. Birdsey (Flintkote Co.); Mr. and Mrs. Otto Sass (Flintkote).



Personals

MIDDLE WEST

Percy Tigwell Dies

Percy H. Tigwell, sales manager for the Beloit Iron Works and an employee of this firm for the past 32 years, died in Beloit, Wis., May 18 at the age of 55.

Starting his employment with the Beloit Iron Works in 1916, Mr. Tigwell "worked his way" through the various departments to the post of Sales Engineer, becoming widely known in the paper industry.

Dr. Otto Kress Honored by Lawrence College

Dr. Otto Kress, who recently retired as technical director of the Institute of Paper Chemistry at Appleton, Wis., was awarded an honorary doctor of laws degree at Lawrence College's commencement on June 13 and he has been further honored by having a dormitory at the college named for him.

Dr. Kress, who received his Ph.D. at Columbia and taught there, founded the institute in 1930 after ten years as superintendent of manufacturing at Thilmany Pulp & Paper Co. and a period as head of U. S. Forest Products Laboratory.

ALFRED SOUTHON, vice president of Kalamazoo Vegetable Parchment Co., and his wife recently made a trip to several European countries. Mr. Southon said residents of Europe seem more concerned over their uncertain political future and peace than even their present harsh living conditions.

GEORGE W. MEAD and **STANTON MEAD**, president and vice president, respectively, of Consolidated Water Power & Paper Co., have sold their interest in the Johnson-Hill Department Store in Wisconsin Rapids, Wis., the oldest and largest store in central Wisconsin. Controlling interest passed to Ray F. Johnson and associates.

WALTER WOLFE, superintendent of Mac-Sim-Bar Paper Co., Otsego, Mich., recently suffered a broken leg when his foot caught in a stirrup while mounting a horse.

HAROLD BURGER, with Sutherland Paper Co. since the early '30's when it started making paper plates, has been promoted to specialty division superintendent of that Kalamazoo firm. He is a graduate of Purdue. **RICHARD DOZIER** became assistant superintendent. Mr. Burger succeeded R. A. Lane, who resigned.

R. A. PETERSON, president of Valley Iron Works of Appleton is the industrial chairman of the U. S. security loan campaign in Wisconsin's Outagamie county.

JOHN A. KOLENKO, JR., of Watervliet Paper Co., was married May 29 to Joyce Elaine Larsen, in Watervliet, Mich.



"TAPPI FUN DAY" at the Gull Lake Country Club, Kalamazoo, Mich., on June 22 was a big success again through the efforts largely of this group (l. to r.): **DON W. MILITZER**, Chairman of the Kalamazoo Valley Section of TAPPI, who is with Garrett, Burgess Co.; **WILLIAM A. LUNSFORD**, Hercules Powder Co.; **FRANK B. EILERS**, Eastwood-Neally Corp., and Orr Felt & Blanket Co., and **DICK MARTIN**, A. E. Woollam Co. On table are some of golf prizes.



BECKETT PAPER CO.'s 100th Anniversary was marked when Hamilton, O., Chamber of Commerce honored grandsons of the founder and their mother. L. to R.: **GUY BECKETT**, Vice Pres. and Sales Mgr.; **CYRUS FITTON**, who presented a plaque for C. of C.; **MRS. MARY MILLIKEN BECKETT**, President; **WILLIAM BECKETT**, Treas. and Mill Mgr., and **DAN BECKETT**, Sec'y.

Ohio officials and business leaders, employees and customers of the writing and fine papers mill — 400 strong — attended a dinner June 8 at which President **R. B. Robertson** of Champion, principal speaker, lauded the "phenomenal record" of the Becketts and their "constructive capitalism" and "good citizenship." William Beckett has devoted much of his time to serving as Hamilton's Mayor.

R. A. NUGENT, manufacturing superintendent of the Nekoosa kraft mill of Nekoosa-Edwards Paper Co., made a tour of Pacific Coast mills in May.

ANTON PRESISINGER, 74, who was employed at the Interlake Pulp & Paper Mill at Appleton as a millwright for 31 years until his retirement ten years ago, died after a long illness recently.

HARRY PIERCE, staff superintendent of Kimberly-Clark planning dept., was speaker at the dinner meeting of the Badger-Globe mill's non-supervisory group at Hotel Menasha, Menasha, Wis.

WILLIAM E. BUCHANAN, president, Appleton Wire Works, Inc., was reelected a director of the Chicago and North Western Railway system for a three-year term at the annual meeting of stockholders in Chicago.

GUNNAR REBNE, head of the experimental laboratory at Nekoosa-Edwards Paper Co., is a former Olympic skier and was first man down the big Olympic slide at Devil's Lake, North Dakota.

A. C. GILBERT, president of Gilbert Paper Co., Menasha, Wis., received a Brand Names Foundation "Certificate of Public Service" at a recent Milwaukee banquet honoring Gilbert's "Columbia Bond" brand name introduced in 1890. It was 16th in a series of banquets over the country. Only three other Wisconsin firms were so honored.

DR. HARRY F. LEWIS, of the Institute of Paper Chemistry, has been elected president of YMCA board of directors in Appleton, Wis., after serving as its vice president. He succeeds as president another gentleman known to the paper industry—**T. E. Orbison** of Appleton Woolen Mills.

PAUL CROSS has been elected president of the Parchment Men's Club of Kalamazoo Vegetable Parchment Co., in Parchment, Mich.

JAMES B. DICKINSON has been named sales manager of wood, paper and pulp products at the Chicago general sales offices of the Diamond Match Company here.

Personals

CANADA

E. LORNE GOODALL, vice - president and managing director of the Dryden Paper Co., Dryden, Ont., announces appointment of **D. H. MAUNSELL** as production superintendent; **J. NICHOLSON** as paper mill superintendent; **NORMAN HOWE** as pulp mill superintendent; **C. E. HOLLAND** as sales superintendent, and **A. HOLM** as finishing room superintendent. All have been with the company for several years in other capacities.

ROBERT WELLINGTON MAYHEW, president of Sidney Roofing & Paper Co., Victoria, B. C., has been appointed Canadian minister of fisheries, incidentally the first Pacific Coast man to be so honored.

JOHN MCINTYRE, public relations officer for Powell River Co., is recovering from a sudden illness.

PAUL E. COOPER, president of Pacific Mills, Ltd., Vancouver, B. C., was expected to return to active duty in June after two months' absence due to illness. He has been convalescing in the Okanagan country.

GRANT ROSS, with Marathon Paper Mills of Canada since its inception, is now mill manager at Marathon, Ont., under R. T. Steedman, general manager of the organization in Canada. Claude Steeves is mill superintendent; R. W. McLeod, townsite manager; Dr. Ferdinand Kraft technical director and Stan. Williams purchasing agent.

M. HOUSE, formerly in charge of Bowater's chemical laboratory at Corner Brook, Newfoundland, has been appointed technical supervisor of the paper mill.

SAM RICHARDSON, for the past several years in the chemical department of the E. B. Eddy Co. at Hull, Que., has been appointed control superintendent of Great Lakes Paper Co. at Fort William, Ont.

GEORGE H. RICHARDS, vice president and treasurer of Celanese Corp. of America which is building a new pulp mill in British Columbia, has been elected to the board of directors of Celanese, increasing the board membership from ten to eleven. Mr. Richards joined Celanese in 1941 coincident with the merger with the Celluloid Corp. with which he had been associated for a number of years.

DR. R. H. BALL of the Celanese Corp. of America, New York, visited British Columbia recently in connection with the company's pulp mill project at Port Edward, details of which he is co-ordinating. Dr. Ball is a graduate of University of British Columbia. His present duties are as assistant to Vice-President George Schneider, in charge of research.



PATRICK W. FIELD (left), General Sales Mgr. for Sydney Roofing & Paper Co., Victoria, B. C., will retire Aug. 1, ending 20 years' service.

JOHN D. VICKERS (right), joined Sydney Roofing & Paper as member of executive staff June 1 and later succeeds Mr. Field as Gen. Sales Mgr. Mr. Vickers was Brit. Columbia Mgr. for Canadian Johns-Manville Co. for 14 years and was with that company for 29 years.



BENTON R. CANCELL, vice president, Powell River Co., addressed Vancouver, B. C., Rotary Club recently, and declared the pulp and paper industry was prepared to make a big contribution towards solution of Canada's foreign exchange problem by increasing exports.

HERBERT FALES, vice president of International Nickel, New York, and **KENNETH H. CLARKE** of International Nickel Co. of Canada, visited British Columbia recently and told about the company's contribution to the pulp and paper industry through introduction of non-corrosive materials.

J. A. YOUNG, vice-president, and **E. W. CAMPBELL**, personnel director, Pacific Mills, Ltd., officiated at the annual inter-company first-aid competition in Vancouver, B. C.

LEE TRENHOLM has been appointed public relations manager of Provincial Paper Co. He was formerly with Underwood, Ltd., in Toronto.

NORMAN TERRY, secretary-treasurer, Canadian Sumner Iron Works, Vancouver, B. C., recently celebrated his 25th anniversary of service with that organization.

D. A. EVANS, vice president of Powell River Co., was recently honored with an honorary life membership in the Technical Section of the Canadian Pulp and Paper Association. Only one life membership may be conferred by this organization each year and there may be only 10 members.

DONALD J. CAMPBELL, formerly of Bathurst Power & Paper Co., is the new groundwood control engineer for Ste. Anne Paper Co., Beapre, Que.

W. GARFIELD WESTON of Vancouver, B. C., was re-elected chairman of the board, The E. B. Eddy Co., Hull, Que., with G. Gordon Gale as president.

P. A. FRATTINGER, plant engineer, Pacific Mills, Ltd., who demonstrated that halibut could be caught in nearby waters at Ocean Falls, B. C., when he took a party of visiting technical mill officials on a fishing cruise on his boat recently.

SOUTH

DR. RALPH E. ADAMS has joined the Coosa River Newsprint Co. as assistant to the president. He has resigned as dean of administration at the University of Alabama.

J. E. TITTSWORTH is plant manager of the Certain-Teed Products Corp. plant at Dallas, Texas, which was formerly operated as the Southwest Building Products Co. The plant is a new one, situated several miles south of Dallas. Production started May 15, 1946. John Novicki is factory superintendent; H. R. Lee, office manager; and, D. W. Martin, purchasing agent.

VERNON C. HILL of Atmore, Ala., is now covering the pulp and paper mills in the South for Oliver United Filters, Inc. He is a graduate of Alabama Polytechnic Institute, Auburn, Ala.

ACTIVE PARTICIPATION in the program for industrial and economic development of Mississippi, Arkansas and Louisiana has come from Arthur Dumaree, mill manager of International Paper Co.'s mill at Bastrop, La. Mr. Dumaree was one of a delegation from Bastrop participating in the recent meeting at Greenville, Miss., in which a program for the Middle South was formulated. Governors of Arkansas, Louisiana and Mississippi participated.

S. L. (JACK) FROST has resigned as acting director of the Texas Forest Service, effective June 30, to accept the position of executive director of the American Forestry Association. He will succeed Ovid Butler, who retired March 31. At 39 he becomes the youngest executive officer in AFA's 73-year history.

ELMER W. CROUCH, assistant secretary and treasurer of Brooks-Scanlon, Inc., Foley, Fla., paid a visit recently to Powell River, B. C., and made his first inspection of the Powell River Co. mill.

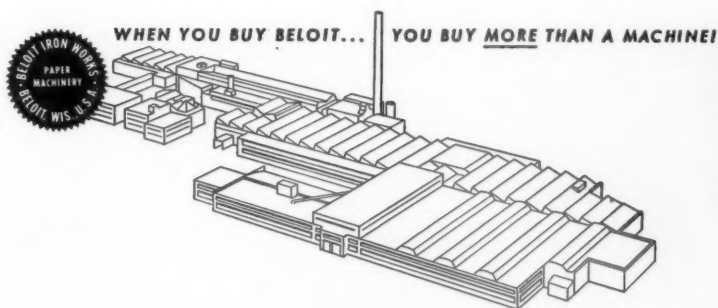
KENNETH L. PIKE has been named production manager for Single Service Division of International Paper Company.



Better finish, drier sheet

The short top felt arrangement of this Beloit machine assures better cylinder machine operation. Among the many advantages are reduced felt cost, better finish, and drier sheet. On existing machines,

this type of arrangement is ideal for saving space, usually permitting installation of an additional vat if desired. Installation shown is at Alton Box Board Company, Alton, Ill. *Beloit Iron Works, Beloit, Wis.*



BELOIT

PAPER MACHINERY

Personals

NORTHEAST

F. S. KLEIN has been appointed mill manager of Byron Weston Co., Dalton, Mass. Mr. Klein has been technical director at the Weston mills for a number of years. **Albert F. Scott** continues as superintendent of rag department, **C. H. Wilson** as superintendent of production department and **P. T. Tupper** as superintendent of finishing. **L. P. Taylor** has been placed in charge of new product development and sales-production coordination.

RONALD W. HYNES was re-elected president and treasurer of Newton Falls Paper Mills, Inc., Newton Falls, New York, at a recent meeting of stockholders. He is a member of the board of directors as well, along with **James H. McGraw, Jr.**, chairman, and also chairman of the board and president of McGraw-Hill Publishing Co.; **Curtis McGraw**, senior vice president and treasurer of McGraw-Hill; **Joseph S. Hildreth**, president of Chilton Co.; **George C. Buzby**, vice president of Chilton; **P. M. Fahrendorf**, another Chilton vice president; and **John Blair Moffett** of Chilton publications.

E. F. MILES whose terms as president of the Salesman's Association of the Paper Industry, New York, expired last February, was recently presented with a gold watch by Vice President **George Watson** on behalf of the membership. It was on "Presidents Day" at the monthly luncheon at Midston House where the regular meetings are held. Among the ex-presidents present were **Mr. Miles**, **Sam Knobe**, **John Johnston**, and **Stan Styles**. Two others, **Ted Lyman** and **Norman Beardsley**, sent greetings. **E. J. Edwards** is currently president.

A. P. SCHNYDER and **FREDERICK WEIRK**, both well known pulp and paper engineers, have joined the newly expanded pulp and paper industry staff of Ebasco Services, Inc., 2 Rector St., New York City. "Ebasco" is Electric Bond and Share Company which has for years been identified with engineering, construction and a wide range of business services to industrial, public utility, financial and other business enterprises.

ABE COOPER, president of Bagley & Sewall Co., Inc., Watertown, New York, received honors in June at a dinner given him by the Quarter Century Club of employees of his company at the American Legion Club. **Harry Marley**, a director of Bagley & Sewall and son-in-law of Mr. Cooper, was toastmaster, and 149 were present, including 103 who have been with the firm from 20 to 48 years. The occasion was the ninth anniversary of the purchase of the company by Mr. Cooper from the Bagley & Sewall families.

Hammermill Promotes Zink, Frampton, Richardson

Major changes in the sales organization of the Hammermill Paper Co., announced by **Norman W. Wilson**, president, have resulted in promotions for **John D. Zink**, **A. Ellis Frampton** and **Grant Richardson**.

Mr. Zink was elected a vice president of the company and named to the newly created title of director of merchandising. He is an ex-president of the Writing Paper Manufacturers Assn.

A. Ellis Frampton, assistant secretary, was appointed manager of advertising and sales development, while **Grant Richardson** was named assistant vice president and manager of sales.

Mr. Frampton has been a member of the Hammermill organization for 28 years and has been assistant general sales manager since 1933. A Hammermill employee since 1914, **Mr. Richardson** had been eastern district sales manager and export manager.

MORTIMER E. GRAHAM, prominent Erie, Pa., and former county district attorney, was elected secretary of the Hammermill Paper Co. of Erie recently. **BERTRAM E. CLARIDGE**, former secretary, was elected vice president. **RICHARD P. PRICE**, vice president and general superintendent, was appointed to serve on the Hammermill executive committee. Associated with Hammermill since 1926, he has been general superintendent for the past nine years.

FRED I. JACOBY has retired from Riegel Paper Corp. after 41 years with the company. He was vice president and general superintendent and in charge of operations of the company's mills from 1944 until retirement. Another Riegel retirement recently announced was that of **Paul R. Bachman**, vice president and general sales manager. Both men continue as directors. **A. P. Mitchell** has been named vice president. **G. Lamont Bidwell** has been named manager of the Milford mill, and **R. L. Kerridge** manager of the "Upper Mills" at Warren, Highesville and Riegelsville, N. J.

G. LAMONT BIDWELL has been elected to the board of directors of Riegel Paper Corp., succeeding his father, **George L. Bidwell**, who resigned after serving on the board for 34 years. **Lamont Bidwell** is manager of Riegel's Milford, N. J., plant.

WILLIAM D. WILSON has been named district sales representative in Northern New Jersey and New York City for the Special Chemicals Division of Pennsylvania Salt Mfg. Co.

LEO GREENEBAUM, President, Willmann Paper Co., 380 West Broadway, New York City, has announced appointment of **Leonard Schwalbe** to the sales staff. **Mr. Schwalbe** is well known in the graphic arts industry and will concentrate on the Mead and Moistrite lines at Willmann's.

Important Changes In West Virginia Company

The West Virginia Pulp & Paper Co., 230 Park Ave., announces important changes in management personnel.

Adam K. Luke becomes honorary chairman of the board, succeeding his brother, the late **Thomas Luke**. The new honorary chairman has been with the company since 1889 and for many years served as treasurer and vice president. He has been vice chairman of the board since 1945.

Sidney M. Phelan, Jr., vice president in charge of sales since 1940, was named first vice president, a newly created office.

Joseph M. Wafer, general manager of the company's industrial chemical sales division, was elected a vice president and director.

Lawrence Kavanagh, who has been assistant treasurer, was named treasurer.

The comptroller's office, heretofore under the general supervision of the treasurer, will now operate independently with **Jotham R. Condit** continuing in that office which he has had since 1938.

Mr. Phelan has served as vice president of the Republic Paperboard Co., Cincinnati, and as vice president of the Foster Box Board Co., Utica, before becoming associated with the sales department of West Virginia. He is a member of the executive committee of the Kraft Paper Association, the National Paperboard Association, and the Fourdrinier Kraft Board Institute.

Mr. Wafer began with West Virginia in 1924 when he became salesman for the Industrial Chemical Co., a subsidiary.

Mr. Kavanagh started his career with the company as office boy in 1920 and was named assistant to the treasurer in 1945 and assistant treasurer in 1946.

The board accepted the resignation of **David Graham** treasurer since 1945. He left to become associated with **Weyerhaeuser Timber Co.**

Graham Moves to Tacoma

David Graham, former treasurer of West Virginia Pulp & Paper Co., has moved to Tacoma, Wash., to take up duties as vice president in charge of finance of **Weyerhaeuser Timber Co.** He was also a former director of the West Virginia subsidiaries, **Robeson Process** and **American Gummed Products Co.**, processors of sulfite effluent products.

Born in Ireland, he was with **J. P. Morgan Co.** in New York, then in advertising work in London. He returned to New York in 1939.

From 1941 to 1945 he was with the Pulp & Paper Division of the War Production Board and predecessor agencies, mostly serving as chief Pulp Allocations officer.

RICHARD T. BARNES, JR., in charge of sales of the pulp and paper division of **International Nickel Co., Inc.**, New York, spent most of May on the Pacific Coast visiting mills from **Bellingham, Wash.**, to **Los Angeles**.

RAYONIER
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WOOD CELLULOSE ► *is dependably uniform*

Rayonier's wood cellulose is supplied in several grades to provide the special characteristics required for manufacture of the various types of products in which cellulose is used.

Quality control in production of these high-alpha grades of cellulose assures the constant purity and uniformity required in making viscose and acetate fibers, cellophane, and various cellulose derivatives.

In addition to development of new and improved grades of wood cellulose, one of the principal functions of our research staff is the study of the processing characteristics of our products under conditions similar to those found in our customers' plants.

Principal Grades of Rayonier Wood Cellulose



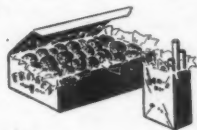
"**RAYACETA**" is a highly purified wood cellulose specially developed for the production of cellulose acetate fibers. It also is used in the manufacture of acetate films and sheets for packaging purposes.



"**RAYOCORD**" wood cellulose is a highly purified product especially suitable for the production of viscose yarns of high tensile strength. It is widely used in the manufacture of tire cords and for textile yarns where maximum strength is desired. It is also a good material for the production of saturating papers and vulcanized fiber.



"**HICOLOR**" is an established grade of purified wood cellulose for the production of viscose fibers and yarns of high quality. It is also used as a base material for vulcanized fiber and related products.



"**RAYAMO**" is a wood cellulose specially developed for the making of cellophane, used increasingly as a protective covering for fruits, vegetables, cigarettes, candy, and numerous other packaged articles.

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MILLS: Hoquiam, Port Angeles, and Shelton, Washington; Fernandina, Florida.

THIEL WINS PASC AWARD



CONRAD C. THIEL, Supt., U. S. Gypsum Co., L. A., center, receives the annual George M. Cunningham award of the Papermakers and Associates of Southern California. Left, William A. Kinney, Pioneer-Flintkote Co., Award Chairman; right, Mr. Cunningham, the donor, who is Pacific Coast Manager, National Oil Products Co.

Below—New officers of PASC, l. to r.: Bruce Brown, Jr., Fibreboard Products Inc., new Chairman; Bob Stevens, Angelus Paper Box Co., Vice Chairman; John Doering, Fibreboard, Secretary-Treasurer; Glenn Phillips, Pioneer-Flintkote, Board of Directors; Alonzo Hatch, Container Corp. of America, retiring Chairman.

Bruce Brown, Jr., chief chemist, Fibreboard Products Inc., of Los Angeles, was chosen chairman of the Paper Makers & Associates of Southern California, at the May 20 meeting, at Ivan's Cafe, Lynwood, Calif. He succeeds Alonzo Hatch, Container Corp. of America, who took over several months ago when W. G. Hartford was transferred east.

Elected new vice chairman is Robert Stevens, manager of Angelus Paper Box Co. New secretary-treasurer is John Doering, also of Fibreboard. Glenn Phillips, Pioneer-Flintkote Co. superintendent, filled the annual vacancy in the board of directors, replacing John Van Ounsen.

Sharing the spotlight of the evening before over 60 members and guests was the George M. Cunningham Award of \$100 for the best paper submitted during the year on operating or administrative procedures in the Southern California industry.

The award was won by Conrad C. Thiel, superintendent, U. S. Gypsum Co., Los Angeles, for his paper, "Good Busi-

ness of Housekeeping." William A. Kinney, Flintkote Co., retired as chairman of the award committee, after serving the prescribed three-year term. His successor was not named. The donor, Mr. Cunningham, Pacific coast manager, National Oil Products Co., made the presentation to Mr. Thiel, who, incidentally, retired as secretary-treasurer.

Mr. Thiel's paper will be published in August **PULP & PAPER**.

Mr. Stevens gave a report on his attendance at the Gearhart, Ore., Pacific Coast TAPPI-Supts convention, and Jack Rhodes, master mechanic, Fernstrom Paper Mills, spoke of a visit to Crown Zellerbach's Camas mill for operational start of the No. 15 machine there.

R. R. HUBER has been named manager of the paperboard division, a new position created at Pioneer Flintkote Co., Los Angeles. Mr. Huber, who came from an eastern mill, has been acting as coordinator at the plant for the past six months.

Personals

PACIFIC COAST

HOWARD MORGAN, manager of the Pulp Division, Weyerhaeuser Timber Co., will move his offices from the mill in Longview, Wash., to the Tacoma Bldg., Tacoma, Wash., main Weyerhaeuser headquarters, in August. He has purchased a home at 405 North 7th in Tacoma.

L. E. "LEFTY" ATWOOD, machine tender and machine room superintendent at Rayonier's Shelton, Wash., mill, has been promoted to general machine room superintendent of all the three Olympic Peninsula mills of that company. Mr. Atwood was a one-time big league baseball pitcher.

J. LOBERT BELL, University of Wisconsin graduate, has been made pulp superintendent, and FRANK C. HAWKS, Jr., U. of Washington grad and former Navy j.g. lieutenant, has become pulp mill shift superintendent at Shelton, Wash., division of Rayonier Incorporated.

GEORGE M. CUNNINGHAM, Pacific Coast manager, National Oil Products Co., Los Angeles, following the awarding of the Cunningham Award of the Paper Makers & Associates of Southern California for 1948, started on his annual motor trip to Nopco's plant in Harrison, N. J. This year his trip will be around 8,000 miles by way of Florida.

SVARRE HAZELQUIST, technical director, Longview mill, Weyerhaeuser Timber Co., suffered a badly sprained ankle as a result of being caught in a rope in a tussle with a calf on his small-edition farm.

BILL FOOTE, new Pacific Northwest representative of The Bristol Co., with Seattle offices, had good reason for missing the Joint Spring Meeting of Pacific Coast Superintendents and TAPPI members. His wife presented him with his second son. Mr. Foote was in rocket development in the Navy during the recent unpleasantness.

DR. EDWIN L. LOVELL has been appointed assistant research director of Rayonier's Central Chemical Laboratory in Shelton, Wash., under Dr. Paul H. Schlosser, research director. Dr. Arthur N. Parrett is chemical director of the laboratory. Dr. Lovell, who prior to his advancement was a research associate on cellulose at the lab, graduated from the University of British Columbia, then did graduate work at McGill.

J. E. CROSBY, Oakland, Calif., has been named general manager, Western Waxed Paper Co. division of Crown Zellerbach Corp., according to R. A. McDonald, executive vice-president, Crown Zellerbach Corp.



The Governor of California *invites You*



EARL WARREN
GOVERNOR

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To American Industry:

In California we are currently celebrating the centennial anniversaries of the beginnings of our State. We gain much inspiration from our review of the progress which has been made in the comparatively short span of one hundred years.

During the past eight and one-half years alone California's population has increased by 47 per cent and our industry and agriculture have risen to positions of great importance in the economic life of the nation.

Our tremendous reserves of natural resources and our strategic world trade position on the shores of the Pacific Basin assure California's continued progress in the years to come.

I am happy, therefore, to join in inviting you to investigate the opportunities for expansion which exist in the many communities of our State.

Sincerely,

Earl Warren
Governor



Earl Warren

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*Address Industrial Department, Union Pacific Railroad
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UNION PACIFIC RAILROAD
Road of the Daily Streamliners

JULY, 1948

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"True conservation of our forests is proper growth, proper use. A crop is grown, a crop is taken. But the wealth of the woods remains."—R. K. Ferguson, president, St. Regis Paper Co.

FLINTKOTE'S FOREST POLICIES

Maintaining Growth by Cutting

The Flintkote Co., whose mill at Meridian, Miss., consumes over 100 cords per day, is the owner of approximately 96,000 acres of forest land, the greater part of which was acquired from Sumter Lumber Co. when that southern pine sawmill "cut out" at Electric Mills, a short distance above Meridian, in 1940.

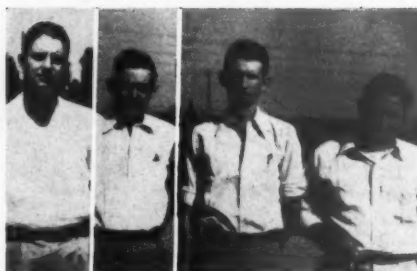
The bulk of these holdings—possibly 80,000 acres—lie within a roughly outlined 30 mile belt running from northwest to southeast ranging in width from 8 to 10 miles. This belt lays in three counties. Three Mississippi Forest Service fire lookout towers, one of which is radio equipped, have a range of vision into the holdings.

The company's lands are divided into ten cutting blocks for cutting on a 10-year cycle. The first of these was cut in 1943-44 and will be cut again in 1953-54. Between acquisition and initial cutting operations, however, the holdings were mapped by a thorough cruise. Detailed maps prepared show locations of roads and streams, timber types as to hardwood and pine, and the condition of the stand.

As acquired, Flintkote's forest lands presented a tempting challenge to the company's forestry department. Meridian is at the extreme southern end of the foothills leading into the Blue Ridge Mountains yet some parts of the holdings are of the long leaf pine flatwoods type. The lands, in general, had been cut for the predominantly growing pine, since the sawmill had operated over a term of years it had gone back over the lands several times cutting pine.

The depletion of pine had afforded hardwoods an opportunity to expand so that Flintkote started with approximately a 75% stand of pine and 25% hardwood. Some sections had reverted to a pure stand of hardwoods because of the inability of pine seedlings to progress under over-shadowing, and because of the prevalence of annual forest fires.

The Forestry Department set a goal of building to a 100% stand so that the land will produce at maximum capacity (which means greater monetary returns



Top (l. to r.): Glen Ball, Plant Mgr. for The Flintkote Co.; Allison Derby, Supt. of Wood Procurement; Arthur Nelson, Chief Forester, and John Cross, Ranger in Meridian, Miss., district.

per acre and minimum transportation distances and harvesting costs.) Of the total stand, the sights were set for 80% pine, and 20% hardwoods.

Studying of the newly acquired forest lands lead to the observation that best reproduction was occurring in areas where existing conditions approached or paralleled those created by the "shelter wood" methods. In this, a sufficient num-

ber of large trees are left to throw pine seed in abundance and then offering enough protection to keep hardwoods from taking over to the detriment of the new pine crop and to serve as "fire insurance trees" in the event of an accidental fire.

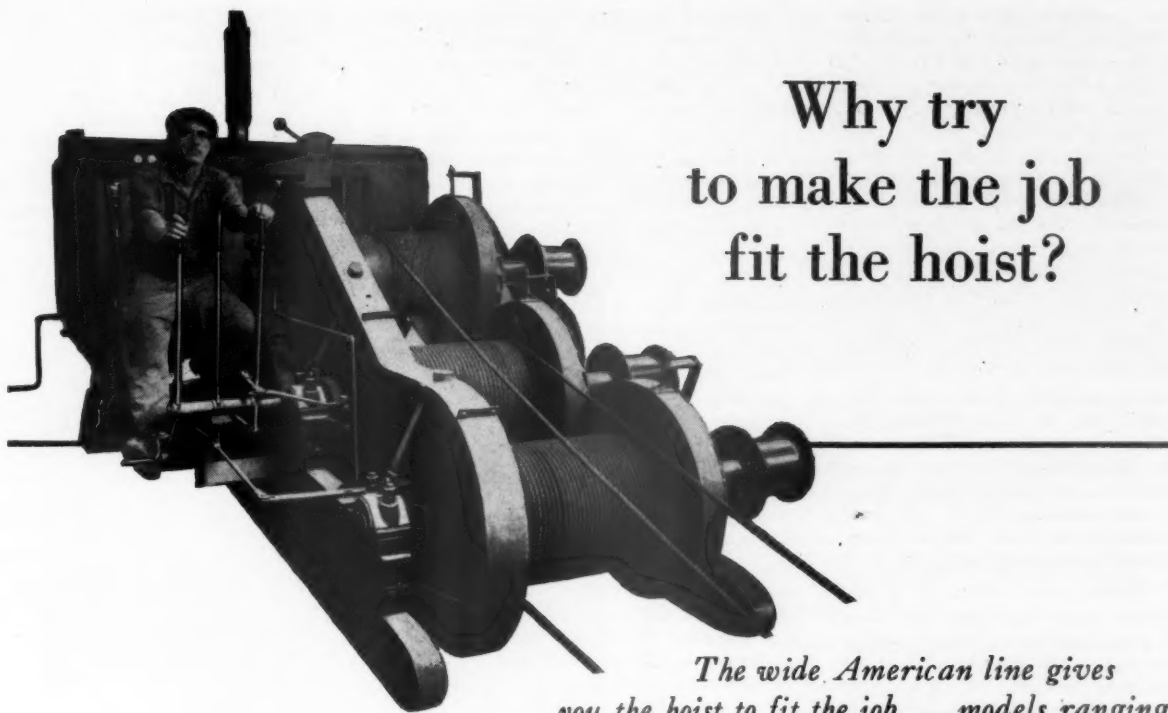
Since it is unavoidable that some hardwoods will be produced this part of the stand is being guided into the valuable species such as white oak, yellow poplar, cottonwood, cherry bark red oak, etc. In working to this end, stand control cutting is managed to afford good growing conditions to straight young stems of the desired varieties. This is based on the thinking that a plant manager would not keep his equipment busy turning out cull material.

In a shelter wood cutting, the company leaves a good scattering of large trees—good straight stems—to throw seed. Then after a good seed year and an interval for the young growth to really take over, it would go back for the larger trees, usually the next cutting cycle.

A factor in the shelter wood theory is



PORTABLE MILL OPERATING in Flintkote Forest. The company, in bringing its stand into balance, has sold saw timber, poles, piling, railroad cross ties, in each case the trees being marked for cutting by Flintkote Forestry Dept., and operations checked. Sales are "on the stump," the company undertaking no part of actual harvesting.



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Ask your "AMERICAN" distributor, or write us direct, for helpful information on any job.

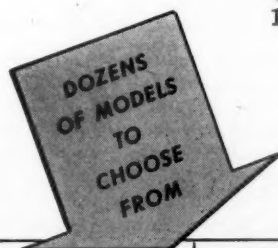
American Hoist



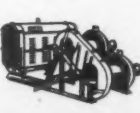



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Roofer's Hoist 500 lbs. S.L.P.	Single Drum Hoist 2,500 lbs. S.L.P.	Double Drum Hoist 7,500 lbs. S.L.P.	Three Drum Hoist 10,000 lbs. S.L.P.	Four Drum Steam Hoist 25,000 lbs. S.L.P.	Three Drum Hoist 40,000 lbs. S.L.P.

JULY, 1948

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that it involves growing large trees in even aged stands. It is contrary to the principle of growing a full stand of all aged trees, a condition giving rise to regrowth difficulty because of hardwood intrusion when individual tree selection is followed. When Flintkote started in, their basic principle was to make the forest land produce its maximum income; putting each tree into the product bringing the greatest return. They hold to the biological theory that it takes trees larger than pulpwood trees to produce good seed. Having large trees, they hold it foolish to put pole material into logs, logs into pulpwood, etc., and the pulpwood production is functional—the taking of thinnings, waste, etc. Sawlog production is the final crop.

The working program is on a basis entirely opposite to just "holding the woods." Their basic theory of operation is that the only way to maintain maximum growth is to cut within limits. They look for maximum growth in old field natural reproduction at a cord per acre, of plantations, particularly in slash, at 2 cords per acre.

Since their lands had been cut over twice for pine, and the company policy was not to cut for pulpwood alone, the initial operation provided for a reversal—that is going after the hardwood stands first. In accomplishing this, the company sold cross ties, logs, firewood, and fence

posts. Then in the pine stands which were in need of cutting they first sold poles and piling then saw timber then took their pulpwood from pole and saw timber tops, and thinnings too small for either of the first two cuts. All trees were marked, and cutting of contractors checked by the foresters in charge.

While selling large timber from their own stands to other wood consuming industries, Flintkote draws about 15% of its pulpwood from its own lands and purchases the balance from others who have thinnings and saw log tops to sell.

Other stand improvement work includes girdling or poison injection in wolf hardwood trees in pine seedling areas. To prevent poisoning of live stock a new non-toxic formula is used. The use of girdling or poison is liked because the branches sluff off in a slow progression so that by the time the trunk rots and falls the space is already occupied by vigorous pines.

Areas having little or no stand are planted into pine seedlings. By doubling the volume of pine per acre, the tax per unit-volume may be reduced 50%. In Mississippi the taxes apply to land alone as growing trees are exempt from ad valorem taxes. A severance tax is paid at the time of cutting.

After the company was well into forest program, it turned to radio for greater efficiency of its organization. This

it has done, saving an estimated 10,000 miles of truck travel in a year's time, and so proving up in other ways that the Forestry Department says it "doesn't know how it got along without radio."

One installation is a MOTOROLA FM short wave 39.42 megacycle unit one fixed station is at the ranger station south of Electric Mills, Miss. and the other is at the forestry office at Meridian. Eight of the company's forestry department trucks are radio equipped. The station started out on the forestry emergency band, but changed to a commercial basis may be effected to permit more elastic use in ordinary woods work. The set was installed early in 1946.

For the type of radio installation used, the height of the antennae is an important factor inasmuch as range is directly related to it. The Flintkote station has been picked up as far as 160 miles away. The signal goes to the horizon, and for Flintkote the transmitter was on top of a hill 7 miles from the central station.

Originally Flintkote had a forest telephone fire control system but finds the radio to be more efficient and more economical. The central station cost about \$550., and outfitting the trucks about \$500. each. It cost \$200 per mile to install a phone line.

The radio operation is simple. It requires only 3rd class license at stations and none on the trucks. Motorola has a pamphlet of 100 standard questions about the radio operation, and the Government 3rd class license can be easily obtained by average forestry personnel. At Flintkote the mill manager, the engineer, even the secretary in the forestry department office have 3rd class licenses. Federal Communications Commission regulations call for a 1st Class operator to supervise the entire system. He tunes the equipment to keep it on wave-length about every six months and measures the frequency to be sure the station is in the center of the band. Flintkote—as any other company could—gets the services of a 1st class licensed operator on a retainer basis. With police, taxicabs companies, and many other agencies going into two-way radio, the opportunity for obtaining requisite supervision on a per hour or retainer basis is improving.

Use of radio—as with other modern equipment—grows on an owner. The records show that during the fire season—September to May—Flintkote forces sometimes check as many as 15 to 20 smokes a day. Total burn through the 1947 season was 218 acres. In effectiveness its hard to beat a radio that will tell a crew there's a fire nearby to catch, particularly when you figure its effective time you save and a 10 acre blaze has a fire-line of $\frac{1}{4}$ miles whereas its a full mile around a 40 acre fire.

In the old days a crew for fire-fighting either sat around a telephone or had to be sent for. Now Flintkote has two crews who are busy setting out seedlings doing timber stand improvement or maintenance work and at the same time keeping

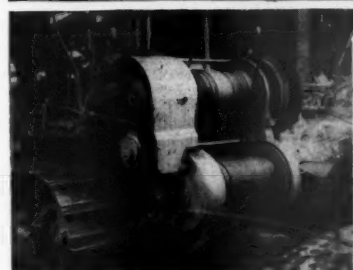
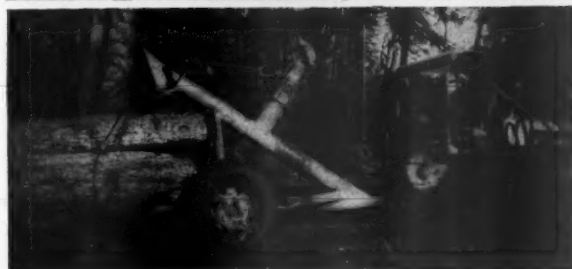


Above: Dodge Power Wagon, equipped with radio, water tank and Panama pump. Has four-wheel drive. Flintkote's plans run to stepped up tire sizes to 900x16 to get better flotation in mud; also to differential lock gears for rear axles to eliminate spinning. Company has two of these trucks, will add third. Inset at right: Motorola radio installation on truck. With water buckets showing. Below: Flintkote headquarters, showing map, radio and phone-equipped desk. The shaded area on map shows company lands. Circle gives fire tower locations.

CARCO

Pioneers in...
PULP LOGGING EQUIPMENT

How CARCO Bulking, Winches, Hoists, Skidding, and tractor logging methods get much logs out fast for the Nation's hungry pulpwood markets.



● **THE CARCO JUNIOR SULKY AND "S" WINCH TEAM** makes arch logging possible for small tractors from 15 to 30 HP. For fast delivery of small loads or where logs are scattered, this midget Sulky and 6,000-lb.-pull Winch bring in clean logs. Wheels are adjustable to two widths for any terrain.

● **THE CARCO STANDARD SULKY AND "E" WINCH TEAM** for tractors to 45 HP arches larger loads of small logs. If traction is poor due to rain, a Winch-Sulky rig keeps you in the woods longer. To haul over a slick or bog, drop the load, go ahead to firm ground paying out line. Then winch up load and proceed.



● **A CARCO "R" HOIST** equipped tractor coupled to a portable spar can go into a heavy stand or rough terrain where arching is impractical and do a quick job of cold-decking. Many loggers are now producing pulpwood profits from otherwise waste trees by pre-logging with a mobile spar.

● **CARCO SULKY LOGGING PRODUCES THREE TIMES more logs than ground skidding methods. FALL YOUR TREES in a herringbone pattern, butt ends in the direction of Sulky travel, for best production.**



CARCO RIGGING is designed for tractor logging—for pulling, hoisting, skidding, and loading.—Available in a full range of hooks, sockets, ferrules, rafting dogs —

● **THE NEW SNATCH CHOKER SYSTEM** for Sulky or high lead logging saves valuable gathering time in the woods. Pre-set chokers are "snatched" to the mainline, then logs are automatically bunched as the line is pulled in.

CARCO tractor logging equipment and methods have been developed by loggers for loggers on *all* types of operations. **REMEMBER—THERE IS A CARCO WINCH OR HOIST FOR NEARLY EVERY CRAWLER TRACTOR EVER MADE AND AN ARCH OR SULKY FOR EVERY TYPE OF TIMBER.**

in constant touch with the fire towers by the radio sets in their trucks.

Other equipment used in forest fire control includes the fire line plow, Dodge Power wagon's and Willys Jeeps each equipped with a Panama pump and tank. The company also goes for "wet water" created by addition of a chemical to break molecular cohesion causing the water to remain spread out in a film and preventing "flare backs". It makes water "go twice as far."

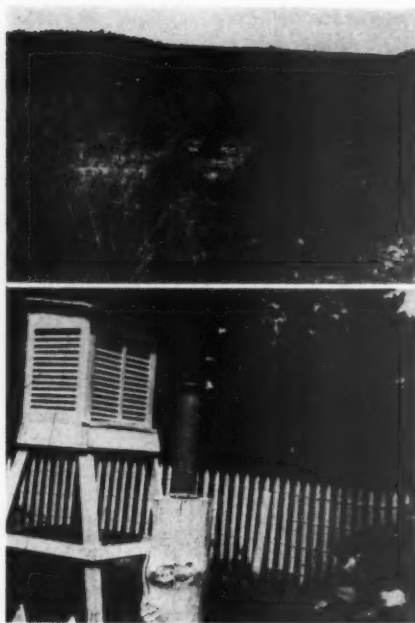
When a fire is large, the company likes a walkie-talkie so that the man in charge can walk around the blaze and order equipment to effective spots. For night fire-fighting, Flintkote has Mine Safety Appliance Company electric light equipment plastic ("hard hats") hats for protecting its men from branches.

The use of airplane aid in locating fires has proven up, too, and the company uses rented services of a Piper cub to check forest fires, particularly in the flatwoods near sundown. It is difficult to fix exact location from fire towers in this area and sometimes takes the ground crew three or four hours to get into the fire whereas working with a plane the location is fixed in 30 minutes. One difficult phase type to locate is a smoldering steam bed, which generally is in a hardwood thicket.

The Forestry Department likes the over-all effect of the radio. On a fire that shows up big, they can and have put 5 or 6 trucks into the scene at once have drawn a crew of 30 men from the wood yard when the blaze was heavy. The radio stays on 24 hours per day. The company relays messages between state men when they seem to have difficulty in contact. A radio log is kept of where the trucks are working and Chief Forrester Nelson sometimes says he will "drop in this afternoon". It is understandable that Nelson would like the feeling of contact with his forestry crew and the same program applies to scattered lands as to the 80,000 acres—as though they were in the mill's front yard.

The woods crew of Flintkote, working under the company's district rangers, have their hands full throughout the year, as many may be judged by the decision of the company not to let the woods "just grow." Everything that they do, and performances of trucks and other equipment, show up in the accounting office's separate showing for the Forestry Department.

As for the land itself, the Department maintains a loose leaf ledger with two pages for each section (640 acres). These pages carry detailed maps on a scale of 8" per mile, with roads, plantations, fences, lookout trees, streams, and all other details including timber types. The sheets also record grazing contracts (the company receives 10c per acre and the leasee puts his own fences.) When the company makes a grazing contract it stipulates (and shows on accompanying map attached to contract) the fence locations to obviate claims for adverse possession. The record is also kept of kinds of cutting done, and the name of the con-



YOUNG PINE TREES SET OUT on a washed hillside of an old farm field by The Flintkote Co. is shown above. Below is weather equipment at a ranger station. W. L. Stuckey is in the corner.

tractor. These detailed records will be of great help when the forest is cut over on the second 10 year cutting cycle.

Wood Inventory Back To Normal in Canada

For the first time since the war many eastern Canadian pulp and paper companies have been able to bring their pulpwood inventories back to normal.

As a result of favorable weather conditions and ample labor force during the 1947-48 harvesting period, it is estimated that the pulpwood cut will go as high as 10,000,000 cords. Figured at an average of \$20 a cord, this gives a pulpwood inventory amounting to approximately \$200,000,000.

Flintkote Obtains Honolulu Plant

I. J. Harvey, Jr., president of the Flintkote Co., which has a Portland, Ore., roofing factory, and F. H. West, president of Hawaiian Cane Products, Ltd., have announced in Honolulu that a plan of reorganization has been adopted whereby substantial assets of Hawaiian Cane have been acquired by Flintkote in exchange for its shares of common stock.

By this transfer Flintkote acquires the Canec insulation board plant on the island of Hawaii and an interest in the Hawaiian Cane affiliate, Insulated Sidings, Inc., makers of insulated brick siding, with a plant at Culver City, Calif.

Union Bag Fellowships

Two Union Bag & Paper Corp. (Savannah, Ga.) fellowships have been awarded for next year to W. N. Haynes and Richard C. Smith, according to Dean C. F. Korstian of the Duke School of Forestry.

B. C. Forest Management Program Defended

Strategic importance of the pulp industry in a world of political uncertainty was stressed by C. D. Orchard, British Columbia's deputy minister of forests, when he defended the government's new forest management license program before a meeting of the Truck Loggers' Association in Vancouver.

When some critics of the program claimed that it played into the hands of big corporations who would be able to hold huge areas of desirable timber-growing country in perpetuity, Mr. Orchard declared:

"We have heard a good deal about the rights of the small operator, but the big operators have their claim to importance, too. We musn't ignore their strategic importance and the fact that battles are no longer settled by a few men shooting at each other. It isn't as simple as that. On the Plains of Abraham in Quebec you can see the spots where Wolfe and Montcalm were both shot and killed within a few feet of each other, and that battle settled whether Canada was to be French or British. Things are different nowadays. The nation that wins wars is the nation that has the organization behind it, and the companies that can produce in volume and in a hurry.

"Cellulose products are needed for military wars as well as for peacetime industry, and to get them in quantity we must depend on big, amply financed and organized companies with an adequate supply of raw materials."

Mr. Orchard also spoke of the economic benefit to the country at large of the stability that could be attained only by big companies operating on a long-term planning basis. But he emphasized that the British Columbia program would not crowd out the "little fellow."

He said that the small operators would have plenty of scope and that they had just as much right to apply for and get management licenses for forest areas as the bigger companies. Actually, he said that at no time would more than 60% of the forest in British Columbia be under the forest management system; the balance would be available, as in the past, to independent bidders. And he foresaw that in the future the small operators would be able to have access to the easier-to-get timber close to tidewater, while the tendency would be for the bigger companies to reach back into the interior for their pulpwood and saw log supplies.

Conference on Bark

The Northeastern Wood Utilization Council, New Haven, Conn., announces a conference on bark, its chemistry and utilization, to be held in Boston, with the cooperation of the Massachusetts Institute of Technology on Sept. 17, 1948. Attendance will be by invitation. Those interested should apply to E. L. Heermance, secretary, New Haven 6, Conn.

TEXAS FOREST SERVICE is adding facilities to increase seedling production by from 5 to 7 millions annually. The 1947 crop amounted to 17 million seedlings despite bad weather.



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The "PIONEER" leads the field with its revolutionary new MULTIPORT engine, developed by I. E. L. engineers. Rated at 4.1 H.P. this new engine utilizes a high compression ratio which, coupled with super efficient scavenging system and a proper degree of turbulence, gives a torque and power output which is unprecedented in this type engine. The high torque is maintained over a wide range of speeds giving the engine an unusual amount of "SNAP."

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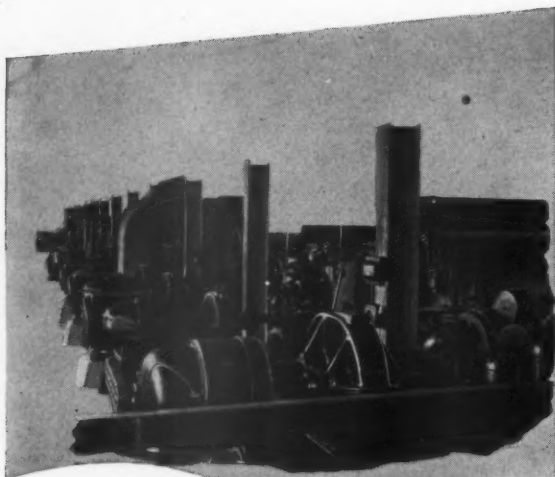
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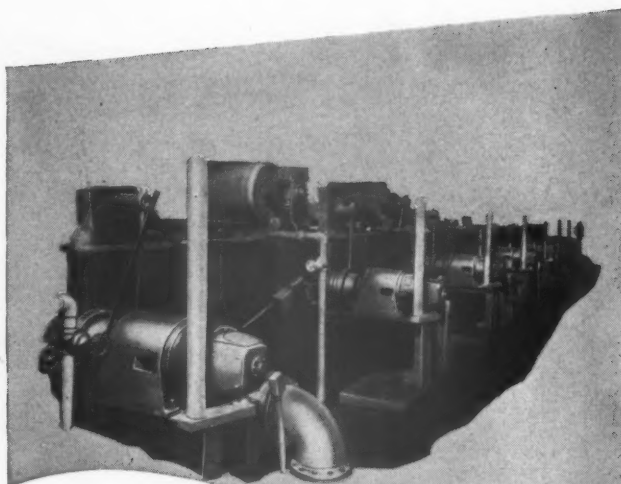
JULY, 1948

77



Precise from start to finish!

G-E ELECTRONIC AMPLIDYNE SECTIONAL DRIVES assure precise speed control—from head box to reel. Higher running speeds are made practical because speeds between sections are held closely. The control is highly responsive to load changes; hence fewer paper breaks. On changing to different grades and weights, you save time, make less broke.



Helpful for "babying" felts

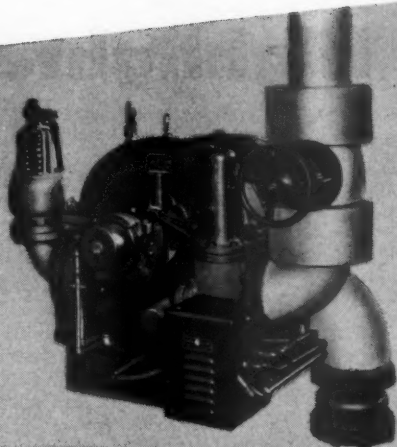
G-E HELPER DRIVES furnish the torque to take all the drive load off the felts, regardless of operating speeds or speed changes. Or they can be co-ordinated with the suction-box vacuum or other variables so as to counterbalance changes in the load. Felts are more fully protected from strain and friction, draw is more accurately regulated, and acceleration and deceleration are smoothly accomplished.

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MEANS

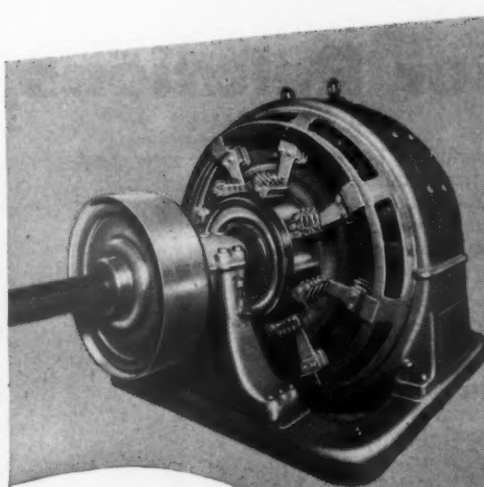


No matter what paper machine you're using—no matter what the operating conditions are—you'll find that the drive you need to cut costs is one of the four basic types described above. General Electric makes all four types—and that's a good reason why you have much to gain by bringing your drive problems to us. With a wide selection of drives to choose from you can get the right



Smooth when you change speed

G-E MECHANICAL-DRIVE TURBINES, with electric governing systems, can be provided with smooth speed changes over a range as high as 30 to 1. The desired speed is attained with no hunting and is held with an accuracy of 1/4 of one per cent under normal operating conditions. The electric governor on this drive is housed in protective enclosures which will resist entry of moisture in damp atmospheres.



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G-E SINGLE-MOTOR DRIVES use an electronic-tube, amplidyne-control combination to provide speed ranges up to 14 to 1 for a wide variety of paper-making operations. The drive is readily adaptable to any primary source of power. It can be directly connected to the lineshaft or operated through a speed-reducing device. The drive is economical in operation, over wide speed ranges.

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combination of speed-control accuracy and sensitivity. You can get practically any speed range you want too. Finally, you can select a drive that's easier to operate, occupies less floor space, and requires less attention. Why not talk it over soon with a General Electric paper-mill specialist? Apparatus Department, General Electric Company, Schenectady 5, N. Y.



GENERAL ELECTRIC

JULY, 1948

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NEW ORLEANS REVIEW

Labor Relations Are Highlighted

Any doubt about the attitude of members of the Superintendents' Association toward the Taft-Hartley Act was dispelled in the ovation which was accorded one of its authors, Congressman Fred A. Hartley, Jr., of New Jersey, who was one of featured speakers at the Superintendents' National Convention in New Orleans in mid-May.

The Taft-Hartley Act is "everybody's bill" and "wrote equity into the rules" for conduct of labor-management relations, he told the May 21 luncheon. In summing up "the truth" about the act, he recalled how it was passed by the largest overriding of a Presidential veto on record, "despite a multi-million-dollar campaign against it."

Designed to stop jurisdictional strikes and secondary boycotts, he said not a single right of labor has been taken away, every provision in the Wagner Act to protect him against his employer stands but now he also is protected against his "labor boss," against extortionate initiation dues, excessive fines, and "his torn-up union card being thrown in his face with the word that he is through."

Referring to violence in the meat packers' strike, Mr. Hartley asserted this will lead to Congress making it a federal offense to violate civil rights of any citizen who chooses to work.

The speaker invited anyone doubting the need for the anti-Communism feature of the act to ask him for records of the Communist-inspired strike at Allis-Chalmers; and, to look abroad.

A joint committee of House and Senate is studying the application of the law, he said, and its invitation to labor to "stop crying and come tell where the pain is" has remained unaccepted.

Charles Reese, Nekoosa-Edwards manager of manufacturing, who will be next president of the association, was toastmaster at this luncheon.

This final day of the convention was given over to considerable discussion of employee training and labor relations.

Johns-Manville Employee Plan

No company can afford to wait for employees to become production wise from experience, stated Stanley Stumpf, of Johns-Manville Corp., Marrero, La., in describing an educational training program. He said it is not laid out on a "canned basis" to apply in all company plants but is tailored to meet each one's needs. The new employee goes into immediate training for his job and starts with a tour of the building in which he will work. He is first shown the entire operations within the building where he will work, introduced to his foreman, and then turned over to his on-the-job trainer.



OLLIE W. MESSNER, Lowe Paper Co., Ridgefield, N. J., new President of Superintendents Association.

Messner Now Prexy; Singletary, a V.-P.

Ollie W. Messner, Lowe Paper Co., Ridgefield, N. J., was elevated to the presidency of the Superintendents' Association at the 28th annual convention in New Orleans, May 19-21.

Other officers stepped up in rank as follows: Charles R. Reese, Nekoosa-Edwards Paper Co., Port Edwards, Wis., first vice president. James Fish, Erving Paper Mills, Erving, Mass., second vice president.

Charles E. Ackley, Crown-Zellerbach Corp., Port Angeles, Wash., third vice president. Glen Sutton, Sutherland Paper Co., Kalamazoo, Mich., fourth vice president.

To step into the line of succession as fifth vice president, the convention selected Gordon K. Singletary, of Brunswick Pulp & Paper Co., Brunswick, Ga., a popular move in the South.

Two past presidents were named to the board: Raymond L. Barton, Michigan Paper Co., Plainwell, Mich., and E. T. A. Coughlin, of Watertown, N. Y.

Methods used in setting up the Shartle Bros. Machine Co. (Middletown, Ohio) training program, and results obtained therefrom were told by W. A. White, Jr. While the course was pointed principally at Shartle employees, many of those attending were from the paper mills.

The training methods, from job induction program on, developed at Union Bag & Paper Corp., Savannah, Ga., were related by J. H. Groves, training director for that company.

Education of both management and labor in the fundamental need for production to give real value to wages was urged by DeLoss Walker, a Chicago industrial relations manager.

Natwick Discusses Paper School

How a projected 24-week occasional school for a selected group of 40 grew

up into a 4-year course that started with 190 applications was told the general conference Friday morning by A. G. Natwick, assistant resident manager, of Crown-Zellerbach Corp., Camas, Wash., who presided over discussions of employee training.

The famed Camas School, of which he is the dean, was started 15 years ago and during the intervening years has not only proven of unmeasured value in upgrading the mill employees, but has gained a national scholastic reputation, he said. The course includes motion pictures, text-book courses developed in the school itself, and illustrated lectures by instructors, who are from higher supervisory ranks with long years of mill experience. The course itself is free to the employees, and currently costs the mill about \$20 per student-year.

Mr. Natwick outlined the courses as follows:

Paper School Courses

"At a weekly lecture of one and one-half hours in the first year class, it is intended to present only the elementary and broad picture of fundamentals of chemistry, physics, electricity, wood—its preparation for pulp making, and steam; the principles of the chief pulping processes, the place of water in pulp and papermaking, the screening and bleaching of pulp, its preparation as furnish for the paper machine, the paper machine operation, paper finishing, paper converting, purchasing and mill management. No attempt is made in the first year to specialize. Lectures are prepared and delivered by mill superintendents and foreman, each in his turn.

"The course of study for the second year directs close, almost exclusive attention toward studying wood preparation, pulp processing and papermaking, specifically as carried on at the Camas mill without particular reference to pulp and papermaking as conducted by other mills or other principles not in use at Camas. The enlarged features of the second year course which provide this emphasis and the moving pictures and mill visits. The second year students attend a weekly lecture of one and one-half hours and are also required to spend an equal weekly period in the mill in observation of that particular operation which has been covered in the previous lecture. Mill visits are made in groups under the guidance of a competent employee-instructor and at periods compatible with the employee's requirements of tour work. On this visit the subject matter of the lecture, which has already given the student a picture of the process, is now fixed in his mind twice over by visual perception.

"Beginning with matriculation in the third year the student comes to depend largely on his own initiative and effort. Seven formal lectures are given, practically all of them by outside speakers. Those on process and equipment are presented usually by manufacturing representatives in allied industries who are authorities on the topics they discuss. Other lecturers in the third year are those who are competent to discuss their subjects, such as officers from the unions and those who are employed in guiding human and labor relations in industry. Subjects covered are:

Industrial Financial Reports

THIS PAPER COMPANY'S CHEMICAL SUPPLIER



Recommended

INCONEL-CLAD STEEL

Water-soluble phenol formaldehyde resin is handled by these tanks.

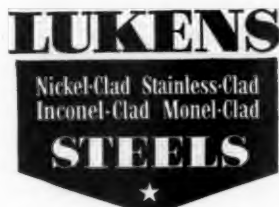
Riegel Paper Corporation of Milford, New Jersey, makers of rope, jute and glassine papers, asked the manufacturers from whom their chemicals came what material they'd suggest for these tanks. Lukens Inconel-Clad Steel was recommended and used.

The need for safeguarding these chemicals was recognized by their manufacturers and user alike. Inconel provided that protection. Lukens Inconel-Clad Steel reduced the cost of these tanks.

If your products or equipment require the protection provided by nickel, stainless steel, Inconel or Monel, it may pay you to consider using clad steels. In Lukens Nickel-Clad, Stainless-Clad,

Inconel-Clad and Monel-Clad Steels, a uniform cladding of the corrosion-resistant metal is permanently bonded to a steel backing plate. Thus you get *solid* metal protection with *clad* steel economy.

Lukens offers the widest selection of clad steels available from any source—thicknesses of $\frac{3}{16}$ " and over, and as wide as 178". Claddings of 10% or 20% of total plate thickness suit most uses. For Bulletins 255 and 338, write Lukens Steel Company, 444 Lukens Building, Coatesville, Pennsylvania.



SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

• • SPEED SCRAP TO THE MILLS TO MAKE MORE STEEL • •

JULY, 1948

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PROMINENT PARTICIPANTS IN SUPERINTENDENTS convention in New Orleans:
Top row (l. to r.): GORDON SINGLETARY, of Brunswick Pulp & Paper Co., who was elected Fifth Vice President, the only new addition to the list of v. p.'s who rise in order to the presidency; CLAUDE METCALF, Brown Paper Mill Co., Monroe, La., who presided over kraft meeting with Mr. Singletary; a trio of old timers with 78 years aggregate service—"Judge" W. M. CARY, National Container Corp., Jacksonville; R. E. HARTMAN, President of Mobile Paper Co., and JOE L. RICHARDSON, Hudson Pulp & Paper Corp., Palatka—

and CEDRIC A. STONE, Champion Paper & Fibre Co., Canton, N. C., presiding over maintenance session.

Below l. to r.: Participants in Employee Training Forum—W. A. WHITE, Shartle Bros., Machine Co., Middletown, O.; J. H. Groves, Union Bag & Paper, Savannah; STANLEY STUMPF, Johns Manville, and A. G. NATWICK, Assistant Res. Mgr., Crown Zellerbach, Camas, Wash., who was chairman—and ROBERT W. PATTISON, American Writing Paper Corp., Holyoke, Mass, who presided over graphic arts session.

Wage Economics of the Paper Industry
Our Place in Fruit and Vegetable Packing Industry
Growing and Use of Second Growth Timber in Pulp
Metals, Alloys and their Structures
Conveying Materials

"Each student is required to spend four hours a week—a total of 64 hours—in mill study allocated 16 hours each to the wood mill, sulphate mill, sulphite mill, and beater operations in regular progression. Four evenings are devoted to general open discussion of problems in these departments, the supervisor of the department in question taking the chair. The mill studies required of this class are on an entirely different basis than the supervised mill visits of the second year class. The student is provided with a pass in his own name which admits him to all departments of the mill for his study at any time day or night. His aim is to apply himself to the particular department being studied as though he were preparing to become a responsible operating foreman. To be sure, this idea is scarcely fully realized except in the case of the more competent individuals; yet it is surprising how well the student trains himself in the knowledge of wood preparation and pulp manufacture and develops in his powers of observation and interpretation.

"The fourth year is entirely similar to the organization of the third year. The third year graduate continues his independent line of study as applied, now however, to phases of (1) types and operation of paper machines, jordaning and pumps, (2) finishing and converting of paper and shipping, (3) steam,

electrical and mechanical departments, and (4) a phase most important for his knowledge, namely, what constitutes the quality of paper products in respect to the particular trade the mill serves and the importance of quality maintenance. This requires an understanding of the whole subject of technical control. As in the case of the third year, outside speakers are invited to speak on subjects dissociated with the industry, but different from those discussed in the previous year, such as:

Evaporation

Principles of Hydraulics, Pumps and Pumping

Vacuum Filters

Manufacture of Alcohol from Sulfite Liquor

"The fourth year student is also expected to attend lectures on wage economics and industrial financial reports.

"One professor and an assistant professor for each course is appointed by the dean, principal (mill technical director) and board of regents (company executives)."

Address by Vertrees Young

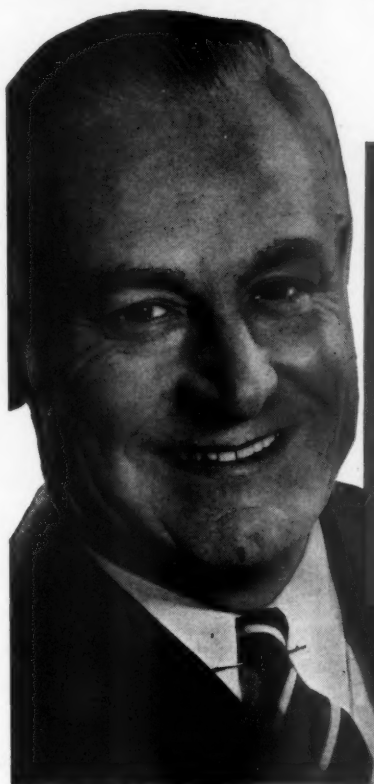
Intensive growing of trees which must be combined with forest fire control, with mill employees and their families helping to carry the message to the countryside, was the solution offered by Vertrees Young, executive vice president, Gaylord Container Corp., for future wood supply, particularly for southern paper makers. Mr. Young spoke at the Wednesday's first general conference over which

J. M. Murray, Gaylord pulp and paper superintendent, presided.

In the early development of the southern industry, Mr. Young said, wood was cheap, abundant in relation to demand, and though timberlands were low priced, funds for their purchase were limited. Now, cheap wood, "as we knew it," is a thing of the past, he said. Higher labor costs, higher stumpage values, higher freight rates and longer hauls to the mills have since 1938 quadrupled the cost of wood delivered to the mill. Wood procurement today is a top executive responsibility.

Just to buy land is not enough, declared Mr. Young. A mill producing 500 tons of pulp per day would require 860 cords per day or 300,000 cords per year. Assuming a growth rate of .4 cords per acre per year, which is better than average for the generally understocked lands of the South, such a mill would need 750,000 acres of woodlands. A 1000-ton mill would need 1½ million acres. Such a large ownership has many disadvantages. Mr. Young stated that over a period of years the yield of woodlands can be built up to one cord per acre per year, with mill supply supplemented in the meantime with purchased pulpwood. Mr.

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shows how to—Select Paint for best results on each surface . . . Prevent over-ordering and underestimating needs. Lists Paint characteristics—as to acids, caustics, heat, abrasion, moisture, etc.



It was a lucky day for me when I got the new Valdura Specification Booklet—on heavy-duty painting. I found it so practical, so easy to use, that it gave me valuable benefits when I selected the paints for renovating our plant.

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VERTREES YOUNG, Executive Vice President of Gaylord Container Corp.: "A 500-ton mill in South needs 750,000 acres of forest lands."

Young's talk accompanied the showing of a film taken of Gaylord's forest operation.

Chipping and Conveying

Discussion of chipping and conveying featured the conference on "Wood Room and Woods Operations" over which Mr. Murray of Gaylord presided. Paul M. Garrison talked on growing of trees, using slides from Gaylord's forest operation. The company has a 5-million seedling nursery.

Chipping of hardwoods has become increasingly important, according to C. L. Durkee, D. J. Murray Co., Wausau, Wis. In the South there are problems in chipping "cat-faces" (pulpwood sections where turpentine has been effected) and gum. In the North hardwood chipping embraces birch, maple and frozen hemlock. The 45-degree angle is not sharp enough for cat-faces and hardwoods, he said, as the knives dull quickly and increase sawdust. The problem was met by mounting multiple knives on the face similar to the old four-knife chipper.

Wood room improvement was discussed by Alfred Suter, Gaylord general superintendent, who described the process of advancement from 1923 at which time they handled 75 tons per day with a crew of 40 men as compared to 700 tons today with a 17-man crew. Now one man controls the operation from barking drum on.

A new arrangement now being installed was described by Mr. Suter. The one-man on control will look down the throat of the chippers and have a mirror for the barking drum. The crane operator will be protected from the weather. The wood from the barker will slide instead of drop, thus preventing crystallization of the steel. The chipper will be 96 inch, 12-knife, with 400 HP motor at 366 RPM. The belt drive will even out fluctuations in the power house. "Where there's noise, there's wear," the speaker said.

The pulpwood (unloading) conveyor

Ray Bennett Cheered Far Year of Progress

Raymond F. Bennett, general superintendent, Ecusta Paper Corp., was acclaimed for a highly successful year as the president of the Superintendents' Association, when he ended his term at New Orleans. In his presidential address, Mr. Bennett referred to the advancement of the organization and the industry at large, which he said were inextricably linked.

He referred to establishment of the Chicago office with Harry Weston in charge as assistant secretary; the increase in membership to 1,380; and expansion of affiliates to 139.

"As usual," said Mr. Bennett, "our largest source of support has been the suppliers to the industry. Our affiliates have given unstintingly of their time, talent, counsel and energy to help make our meetings successful."

In another address at the final banquet, he said progress in the pulp and paper industry has been and will continue to be influenced by the association and its affiliates. Mr. Bennett was toastmaster and introduced Harry H. Straus, president of Ecusta Paper Corp., the principal speaker.

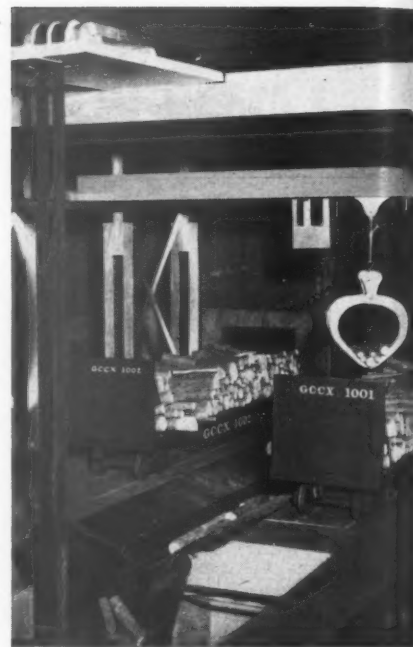
now being installed at Gaylord is radical in design in that the return is overhead instead of beneath the wood carrying section. It is built flush with the ground. The conveyor (see accompanying photograph of model) was described by Mr. Suter, and its conveying chain discussed by J. W. Sears, of Link-Belt Co.

Gaylord's new wood yard will have a conveyor with a surprising arrangement, said Mr. Sears, and due to its length and path it was necessary to design a new chain. Other industries (cement mills) have had success with all steel chain with bushings fitted into the inside links and cold rolled steel pins with milled ends press fitted into the outside links.

For this reason, Link-Belt suggested an all steel chain would be the answer for this application. The Gaylord chain is made up of heat-treated high carbon steel side bars. These are punched, broached and fitted with case hardened bushings with miller ends press fitted into the inside links, and case hardened cadmium plated pins with milled ends press fitted into the outside links, and then carefully riveted into place. Outwardly this chain has the same pitch and appearance of the present C-132 chain but wear has been eliminated by press fitting in all cases and making the entire chain heavier than the present C-132. The average ultimate strength of the C-132 chain is 90,000 pounds and the average ultimate strength of the new chain is 120-000 pounds.

Here are the new and old chain specifications: SS-1469 new chain)—pitch, 6 inches; side bar, 2 3/4 by 5/8 inches; bushing diameter, two inches; pin diameter, 1 1/8 inches. No. 2-132 old chain)—pitch, 6.05 inches; side bar, two inches high by 1/2 thick (inches); barrel diameter, 1 23/32 inches; pin diameter, one inch.

For the inclined conveyor to the barking drum, Link-Belt designed a cleanout flight and a pusher flight. Instead of using two individual attachments such as are in service today, a modified spur attachment was designed for the Gaylord job. It flares to eight inches on either side of the center line of the chain and provides pusher action by being three



THE NEW PULPWOOD UNLOADING CONVEYOR (from rail cars) will be located at ground level, and the first section will be horizontal, as described by speaker at New Orleans. The conveyor belt (at left) as shown in this photograph of the model displayed at the convention, will return overhead, quite a departure from the conventional mill wood yard. This model was made by Gaylord Container Corp. to demonstrate the practicality of the arrangement. The belt is being furnished by Link-Belt.

inches higher than the center line.

The attachments on both the horizontal and inclined conveyors are spaced every six feet and the entire chain is completely riveted between attachments.

The efficiency and action of electric drives with fluid couplings for materials handling equipment and power driven machinery was discussed by Fred W. Atz, Jr., of Link-Belt.

Mill Maintenance

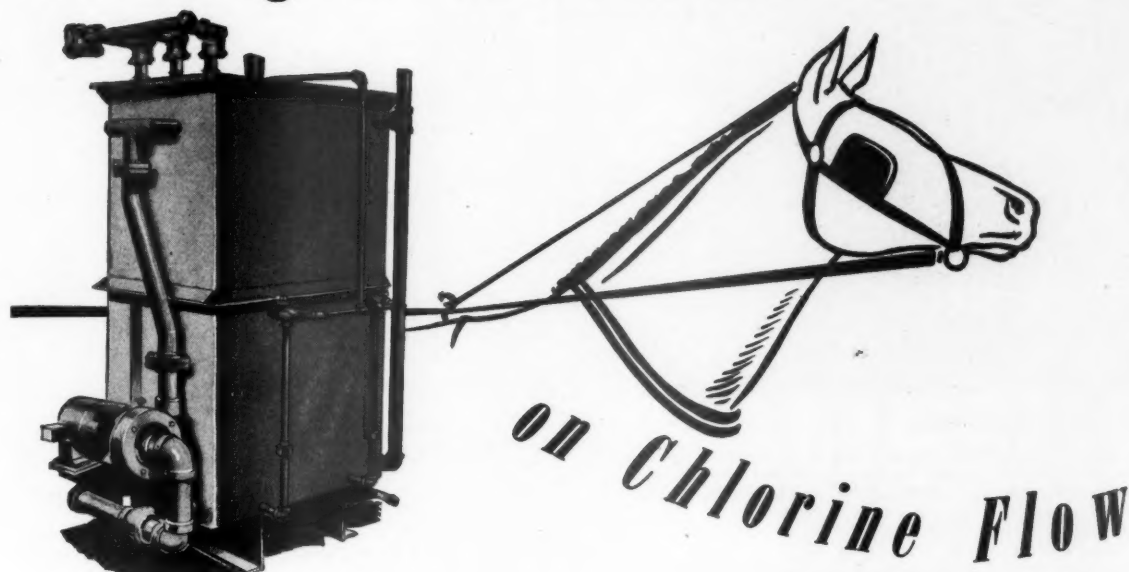
Techniques of application and finishing of insulation, with discussion of maintenance, were embodied in a paper presented by Utley W. Smith, manager, The Magnesia Insulation Mfrs. Assn., at the session on "Mill Maintenance." Magnesia (85%) is used on equipment operating at temperatures up to 600 F. Above that, a combination insulation consisting of an inner layer of diatomaceous silica and an outer layer of 85% magnesia is used.

In speaking on the value of a good maintenance, William P. Jordan, Ecusta Paper Corp., emphasized the need of proper tools with which to work. "The machine tool builders," he said, "have made great strides in the design and manufacture of machine tools."

Limitation of pulpwood piles to maximum 20,000 cords, with gaps in between stacks was recommended by J. P. Hamilton, Associated Factory Mutual Fire Insurance Co., in his talk on fire causes and protection.

Use of non-corroding alloys will give a longer life and lower maintenance costs in

Putting a Checkrein



Even as short a time ago as 1930 the methods of controlling and measuring chlorine were quite unsatisfactory. A batch of liquid chlorine was put in weigh tanks. This measured weight was then evaporated and conveyed to the point of use. To use this batch of prepared chlorine gas in a continuous bleaching process required a close control that was just unobtainable with existing equipment.

Variations in temperature and pressure caused erratic gas flow from the evaporator. With a demand of up to 2000 lbs. per hour, reducing valves of that date were inadequate. How to maintain uniform pressure and temperature therefore was a problem tackled by Hooker chemists and engineers.

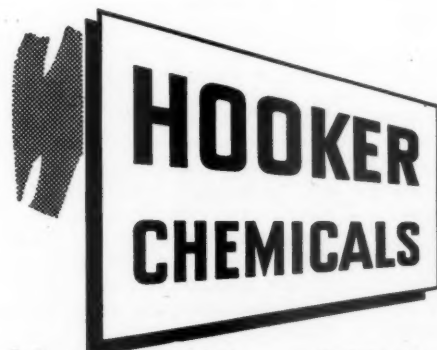
This problem, in so far as it relates to temperature, was solved by the design of a chlorine evaporator that maintained a constant chlorine gas temperature. This evaporator was patterned after a boiler with the chlorine entering at the bottom through tubes which rose through a hot water bath. Water temperature was regulated by

the injection of steam, whose flow was controlled by a solenoid valve and mercoid switch. The switch was actuated by the temperature of the chlorine gas leaving the evaporator.

A baffle plate freed the rising chlorine gas from drops of liquid and dry chlorine gas at uniformly held temperature was collected in a dome or chamber at the top of tubes. From this point the chlorine gas was fed through the necessary control equipment to its place of use.

By means of such improvements in the handling of chlorine, Hooker has continued its close association with the pulp and paper industry. Our purpose has been to make it easier and safer for you to use chlorine. Today, as in the past, the problems you are daily encountering are of concern to us. One basic way in which operating problems are kept at a minimum is in supplying you with uniform high quality chlorine, caustic soda and other chemicals.

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Chlorine

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DISCUSSION LEADERS AT NEW ORLEANS:

At left: J. W. SEARS, Link-Belt Co., Chicago; and J. M. MURRAY, Gaylord Container Corp., Bogalusa, La., seated. Mr. Murray presided over the Wednesday morning general conference and Wood Room group meeting Wednesday afternoon.

The others:

Top row, (l to r): G. H. SUHS, Sorg Paper Co., Middletown, O., Co-Chairman, Thursday afternoon Power group meeting; CHARLES REESE, Manager of Manufacturing, Nekeosa Edwards Paper Co., Port Edwards, Wis., Chairman



of Thursday Power group and who is First Vice President and now in line for the Presidency of the Superintendents' Ass'n for the term June 1949 to June 1950.

Bottom row, (l to r): JAMES R. SIMPSON, Champion Paper & Fibre Co., Hamilton, O., who presided over Tuesday's group session on Coated Papers; HAROLD SKINNER, Marathon Corp., Rothschild, Wis., (seated), who presided over Sulfite group meeting Thursday morning; CARL WELTE, Champion Paper & Fibre Co., Canton, N. C., presided as Co-Chairman over Fine Paper and Tissue group meeting Thursday morning, and as Moderator of the Panel discussion.

pulp and paper mills, according to H. O. Teeple, International Nickel Co., who gave comparative data on a number of alloys which so far have given satisfactory service.

Coated and Fine Papers

At the Coated Papers Conference there was a panel discussion of coating technique over which O. W. Callighan, Edgar Bros. Clay Co., New York, presided. Those participating in the panel discussion included Mr. Simpson; Dr. George Cramer, Sinclair & Valentine Co.; E. T. A. Coughlin, of Chas. T. Main, Inc.; Howard B. Richmond, Consolidated Water Power & Paper Co.; Benjamin R. Newcomb, of John Waldron Corp.; Edward P. Gillan, Anheuser-Busch, Inc.; Ward Wheeler, Wheeler Roll Co.; Prof. R. F. Reed, Lithographic Foundation, and Morris Kantrowitz, U. S. Printing Office.

In the Fine Paper and Tissue Conference, Frederick A. Soderberg, General Dyestuffs Corp., emphasized that "it is impossible to say too much about the value of good housekeeping in the average mill . . . machine time lost during a wash-up is negligible when improved quality of product and increased production which ensue are taken into consideration."

The speaker cited the necessary tools of adequate slime control as:

1. Hot water, alkali and an effective dispersing agent to clean the system thoroughly. All old accumulations of adhesives, spatter, fungi, and bacteria should be completely removed.

2. A dispersing agent which may be added regularly to the system in small

dosages, thereby preventing agglomeration of adhesives. This treatment will also forestall any build-up of breeding materials and colonies of micro-organisms.

3. An outstanding bactericide to render the capsulated bacteria and other slime formers in this category impotent.

4. An effective fungicide to take care of the growths which are immune to the bactericides.

The speaker said it required four to twelve weeks to make a fair test of any slime control product.

In the panel discussion that followed on "the modern paper machine" Carl Welte of Champion served as moderator and members included: J. Wesley Joslyn, Sandy Hill Iron and Brass Works; Fred Sanger, Pusey & Jones Co.; Leon E. Smith, Downington Mfg. Co.; H. C. Moore, Beloit Iron Works; G. A. Peterson, Rice-Barton Corp.; C. H. Vickery, E. D. Jones & Sons Co., and Paul Boronow, Valley Iron Works.

Paperboard Discussions

One of the best attended, lively group meetings was that on board, over which Harry E. Hadley, of Gardner-Richardson Co., Middletown, O., presided. The performances of felts and cylinder machines were discussed.

Every problem rising from felt behavior on board machines has a reasonable explanation and can be solved by changes in construction of the felt, which calls for close cooperation with the superintendent and his men, said L. M. Woodside, Albany Felt Co.

While worm rolls are damaging, he

said, there's no point to removing a partly worn out felt because of filling up. Likewise if worm rolls permit higher average speed, they should be used. The same thing can be said of spread rolls and suction boxes, within reason.

Along these lines, many board mills are placing more emphasis on high average daily production than on felt cost per ton of product, he said. That is, the over-all operating efficiency of the machine is considered of first importance. Appreciating that fast, trouble-free operation results in greater profits, they never nurse a felt for a few days' longer life, but cut it off as soon as it begins to lose efficiency.

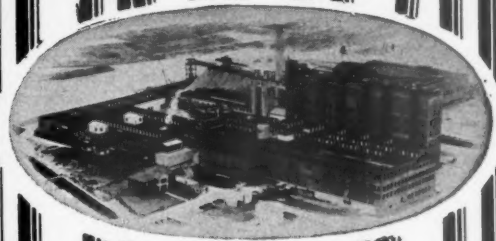
"I know of one mill which increased production 20 tons per day with a higher felt cost of about 30 cents per ton—a very profitable improvement for the mill," the Albany man said. "With the high labor and overhead rates in effect now resulting in charges often times exceeding \$100 per hour, everything possible is being done to prevent shutdowns for felt changes, washups, or trouble of any kind."

Downington Speaker

Refinements effected in cylinder machines were discussed by Jacob Edge, of Downington Manufacturing Co., the points of a recently installed 7-cylinder board machine being described with the aid of slides. A principal point emphasized by the speaker was the use of stainless steel, the utilization value of which was stated as follows:

"The use of stainless steel has sometimes been termed a 'luxury item' on a paper machine. Perhaps during these unsettled times you might call it so but I

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feel confident that in a very few years mills having stainless steel vats will feel they are more than a luxury for easy to clean equipment and clean paper is becoming more important every day. To have a vat that is easily cleaned with a common hose makes real cleanliness an easy job. Also the bacteria count of paper will be watched more closely especially in mills making bottle caps, butter cartons, etc., even cerial box board may have to come under a certain bacteria count specification. The stainless steel vat is one way to help control this situation."

Mr. Edge said there's always controversy about preliminary water removal equipment. In the case of the machine being described, the customer chose a suction drum roll. This drum was a 30" drum with 25" wide suction box carrying around 15 inche of vacuum. The machine also had pneumatic loading cylinders, motor broke operated broke conveyor, and suction felt roll with water leg arrangement. In accordance with modern technique, the plain and suction presses are alternated.

The panel discussion followed, with John Stimson, of Hummel & Downing Co., Milwaukee, and Walter Wolfe, Mac-Sim-Bar Paper Co., Otsego, Mich., on the panel. Mr. Wolfe, serving as moderator discussed results from that mill's 8-cylinder machine. S. R. Olsen, Champion Paper & Fibre Co., Pasadena, Tex., discussed curling of butter carton paper.

Kraft Operations Reported

Three most interesting phases of kraft mill operation were discussed in a well attended group meeting Thursday over which Gordon Singletary (Brunswick Pulp & Paper) and Claude Metcalf (Brown Paper Mill Co.) presided as co-chairmen. The first of these was a favorable report on results of automatic instrument control of digesters; the second, comparable tests between jordans and Hydrarfiners; the third, chemical recovery from stack gases.

A saving of 500 pounds per ton production of pulp of more uniform quality which eliminates sudden changes in freeness and minimizes changes in refining equipment has been experienced by North Carolina Pulp Co., Plymouth, N. C., since the installation of automatic controls for digester pulping, according to Joseph F. Keyes, pulp mill superintendent there.

Prior to installation of four additional digesters completed last October (from Jan., 1947) they were using 5700 to 5900 A.A. per cook for hard pulp; 6100 to 6400 for soft pulp, depending upon the wood. It required 1-hr. 20-min. to reach 100 lbs. and then 1-hr. at that pressure with 2 hr. 20 min. total cooking time on hard pulp. On soft pulp 2 hrs. to reach 90-lbs. then 1 hr. 15 min. with 3-hrs. 15 min. total cooking. Total volume for cook on each was 8500 gallons.

Additional digester capacity made possible lengthening cook on hard pulp to require 2 hrs. to reach 100 lbs., then 1 hr. and 15 min. for a total of 3 hrs. and 15 min. cooking time on soft pulp was unchanged.

After instrument control installation and its adjustment active alkali has ranged from 5100 to 5300 pounds on hard; 6200 pounds on soft pulp. Hard pulp total volume is now 8500 gallons in large and 8000 gallons for small digesters. Soft pulp total volume is now 9000 gallons.

Steam consumption in the past month has averaged 2730 pounds per ton against 3275 pounds for the period prior to instrumental control. The installation is by Mason-Neilan Regulator Co. and there are now 10 digesters at the mill. Results are substantiated by paper tests.

New Affiliates Committee Is Elected

Election of a new slate of members for the Industrial Affiliates Committee took place at the affiliates annual meeting May 18 in New Orleans in advance of the Superintendents convention.

Frank E. Hutton, of Babcock & Wilcox, served as chairman of the dinner meeting and the nominating committee was composed of Ivar Ekholm, National Analine; Olney Steffens, Penick & Ford; and, S. W. Fletcher, of J. O. Ross Engineering Corp.

Committee members elected for the coming year were: R. M. Upright, Dow Chemical Co.; Edward L. Lukemire, Dicalite Co.; F. A. Soderberg, General Dyestuff Corp.; Allen Hyer, Bagley & Sewall Co.; F. F. Frothingham, Bird Machine Co.; A. C. Clarke, John W. Bolton; J. L. Van Nort, Reliance Electric & Engineering Co.; Norman B. Scott, Orr Felt & Blanket; R. E. Briggs, Jeffrey Mfg. Co., and James M. McAlear, Mason-Neilan Regulator Co.

Improvements of other facilities affecting stock handling and use has opened the way to development of refining equipment which will get maximum fiber development, according to a paper prepared by Tony Agronin, Shartle Brothers, whose talk on Hydrarfiners and jordans was illustrated by graphs showing test results.

The Hydrarfiner is designed for strength development characteristics without materially shortening the fiber. In the Hydrarfiner action the tear increases and you get some increase in tensile and Mullen. These tests are increased with practically no freeness drop and and slight increase in shrinkage.

With jordans, tear drops off immediately whereas tensile and Mullen increase much more rapidly, he said. The freeness drops off quite rapidly and shrinkage value increases.

The type of machine to be used depends upon the final physical tests required, he said.

To develop strengths in Hydrarfining it was found necessary to operate at relative high speed vs horsepower—meaning bar to bar clearance which itself determines type of work done. It was found, for this particular type of treatment, that maximum consistency possible for a particular installation, makes for most efficient operation. Six percent has been set as an optimum figure, though both higher and lower have been taken.

The effect if pressure is debatable. Sufficient pressure must be provided to keep the machine full and it is found that a slight additional pressure makes for more efficient operation. Inlet pressure around 10 pounds per square inch has been set. There is no hydrating machine today that is an efficient pump.

While these conditions, apply to Hydrarfining, obtain minimum cutting and maximum of strength development per horsepower per ton, the jordan fiber cutting action is different. With jordans the first requirement is high horsepower vs speed, with higher power at slow speeds the determining factor. Consistency should be low, with 3 to 3½% as optimum for best and most efficient work. On pressure, beyond what is necessary to keep the jordan full is not recommended as further pressure would decrease cutting effect.

Operating details and results of Cottrell electrical precipitators in 37 different installations were presented to the kraft session by L. M. Roberts, of Research Corp., New York. The paper was jointly prepared by the speaker, C. E. Beaver, and W. H. Blessing. The talk was similar to that presented at the Asheville (N. C.) joint meeting of Southern and South-eastern Division, and reported in the Nov. 1947 PULP & PAPER.

Sulfite and Power Conferences

Harold Skinner, of Marathon Corp., Rothschild, Wis., presided over the group conference on sulfite Thursday. In this session, H. C. Corbin, Socony-Vacuum Oil Co., New York, described the action of that company's Solavent 911 as an emulsified petroleum base additive in sulfite pulping.

The power group meeting program proved to be so extended although there was evidenced a genuine desire to embark into lively discussion of recommendations for power circuit protection, and of pressure for paper machine dryers, the session had to adjourn. Charles Reese, of Nekoosa-Edwards Paper Co. was chairman, and G. H. Suhs, of Sorg Paper Co., co-chairman.

While available coal is deteriorating in quality mechanical equipment is being improved to solve this problem so that when mounting demands for gasoline reduce petroleum fuel supplies for boilers, power houses will be able to meet the situation. This is what John Van Brunt, Combustion Engineering, New York, said in a paper read for him by Vincent P. Owens of the same company. The paper prophesied that large investment plants, such as in pulp and paper mills, will be called upon to make the higher cost installations required for low grade coal burning.

The paper assumed as a basis that by 1957 there will be from 12 to 16 million more cars on the road than today as well as increased numbers of other users. He said the production rate of supplementing synthetic oil made from coal is guess work. In discussing specific boiler installations in the paper industry, he mentioned Longview Fibre with 900 psi, and the new Babcock & Wilcox installation at Union Bag & Paper Corporation which will step up to a new high (reaching public power plant scale) with pressure at 1400 pounds and steam temperature around 1000 degrees F.

Preparations for chemical cleaning of boilers and paper processing equipment started with laboratory test of materials to be removed, said J. T. Browning, Dowell, Inc., Tulsa, Okla. (a Dow Chemical subsidiary), who pointed up his talk by emphasizing savings in "down" time for the process which runs from six to ten hours.

The equipment used includes mobile units with supply and mixing tanks, sectional pipe and flexible couplings, and power take-off from truck engine to drive pumps. Chemical cleaning often requires use of a catalyst and with it a component to prevent corrosive action, this being due to complex characteristics of the material to be removed.

An interesting talk on the development of the modern paper machine drive was given by George W. Plaisted, of General Electric Co., who outlined the eight principal requirements involved. Both the mechanical (line shaft) and sectional drives have undergone extensive change during the past 28 years, with the sectional installation enjoying a slight advantage at present, he said.

A full analysis of the modern type of protection of electrical circuits and associated apparatus in paper mills was given by W. M. Emmons, Switchgear Division, Westinghouse Electric Corp., who took as his example the prevalent installation of 2400 volt generation and primary distribution with synchronizing bus and reactors; larger motors 2300 volts and smaller motors 440 volts. Mills of this type cited as typical examples included International Paper (Southern Kraft Division), Gaylord Container Corp., Union Bag & Paper Corp., Champion Paper & Fibre Co., and Southern Advance Bag & Paper Co.

Graphic Arts

Robert W. Pattison, of American Writing Paper Co., Holyoke, Mass., presided over the first group meeting on graphic arts held in connection with Superintendents' Association.

Four types of problems traceable to paper characteristics are encountered in offset lithography, according to Prof. R. F. Reed, Lithographic Foundation, Chicago. The first classification in difficulties was given as in feeding and register. The first requires square corners; an essential of the second is flatness. The use of pre-conditioned paper has been successful in helping to accomplish the second. Picking and splitting rise from insufficient hydration or surface sizing; or from insufficient internal bond strength in the sheet. In ink drying paper having pH values of 8.0 or more give least trouble. Excessive free alum will cause scumming, but this amount is not frequently found.

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Heppenstall Knives Increase Mill Production

A complete change-over from carbon to Heppenstall's E.I.S. alloy steel chipper knives has increased soda and sulfite pulp production at one of the leading mills in New England, according to a mill executive's report.

The resulting increase in wood chip production to keep up with pulp machine capacity began to take place in 1940 when there was a tremendous demand for pulp and paper—and a scarcity of readily available new machinery.

Dysstuffs Prices Up

The Du Pont Company announced increases of 5 to 10%, effective July 1, on selected items of dyestuffs where the company said the action was made necessary by increased production costs.

On more than a majority of the hundreds of dyestuffs items it produces, it is making no increase even though costs have also increased on these.

Would Represent Mills in Philippines

Equitable Trading Co., 208 Juan Luna, Manila, The Philippines, wants to represent U. S. paper manufacturing firms to the Philippine market, M. U. Kuyyong, general manager, writes. Chase National, Irving Trust, Hongkong & Shanghai Banking Corp. and Bank of California are named as credit references.

TOM WALTON, of Kimberly, Wis., member of the woodlands staff of Kimberly-Clark Corp., was recently rushed by plane from Bracebridge, Ont., to Appleton, Wis., when he became ill en route to K-C operations at Kapuskasing. A Kimberly-Clark twin engine plane, with the corporation pilot at the controls and a nurse in attendance, brought Walton back in record time. He is now recovering nicely.

JULY, 1948



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Further Plans for Mill Announced by Canadian Firm

Crown Zellerbach Corp. will advise Canadian Western Lumber Co. of Vancouver, B. C., in the development of its plans for kraft pulp and newsprint mills of 165 tons each, to be located at Duncan Bay on the east coast of Vancouver Island. The mills will cost about \$25,000,000.

Henry Mackin, president of Canadian Western, made this announcement following the signing of the forest management license with British Columbia government which entitles Canadian Western to perpetual control of a large block of

timber on condition that it follows a sustained yield program.

Timber being acquired from the government is reported to be about 150,000 acres.

New Book Ready

A new book by Marcus Alter of Commercial Paper Corp., entitled, "Paths to Lasting World Peace" has just been published by the Commercial Publishing Co. of San Francisco, Calif.

German Rayon Pulp Imports To Be Cut

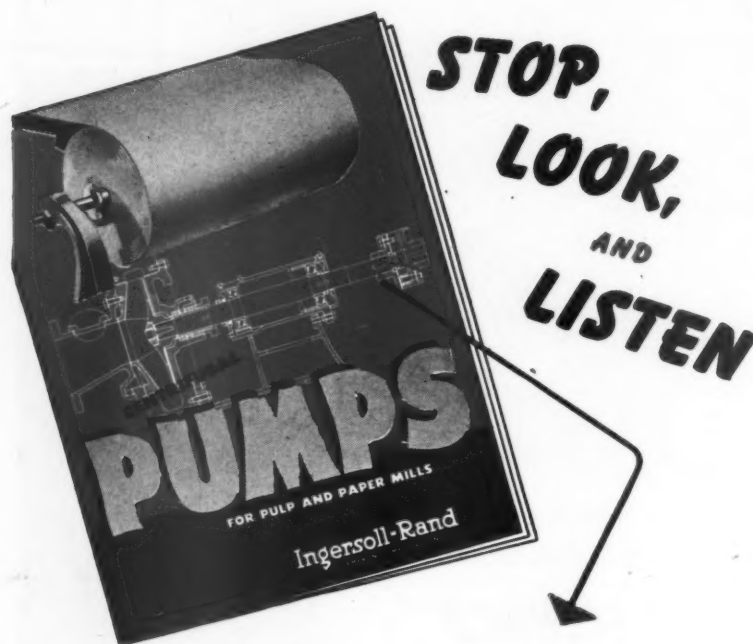
Development of a process for manufacturing high-tenacity rayon from beechwood pulp will reduce \$1,500,000 in imports of high alpha pulp for the Combined Zones rubber tire industry in Germany, according to Canada's Foreign Trade Service. The pulp is produced by the Waldhof Fabrik at Kostheim, near Wiesbaden, and at Mannheim, while the rayon is spun at the Glantzoff Fabrik in Obernburg. Present pulp production capacity is about 500 tons monthly.

Experiments toward producing high-tenacity rayon from beechwood were started over a year ago by German firms, with the help of United States technicians.

Ohio Knife Develops New Slitter Assembly

A recent development of the Ohio Knife Co. of Cincinnati, Ohio, is the O-KNI-CO-LOK slitter assembly, now in use in paper mills and paper converting plants. The O-KNI-CO-LOK eliminates rivet trouble in knife assembly. A small projecting button slips into any of the holes designed for all rivet type slitters and holds knife firmly in place. For further information write to Ohio Knife Co., Dept. M, Cincinnati 23.

WOODLANDS SUPERINTENDENT—Desires change, 13 years' forestry experience, 6 years in charge of land acquisition, management, and pulpwood production for large paper mill. Forestry graduate; 34 years of age. Reply Box 10, Pulp & Paper, 71 Columbia St., Seattle 4, Wn.



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PULP & PAPER

DISCUSSIONS AT OCEAN FALLS

New Bleaching Process is Explained

Henry Ostrowski, technical control supervisor, Pacific Mills, Ltd., at Ocean Falls, B. C., is the new chairman of the technical section, Pacific coast branch of the Canadian Pulp and Paper Association.

He was elected at the recent annual meeting of the section in Ocean Falls, succeeding John Ashby, mill manager of Westminster Paper Co., New Westminster. John Guthrie, sulfite superintendent, B. C. Pulp & Paper Co., was chosen vice chairman. John Evans, Sorg Pulp Co., continues as secretary-treasurer.

Sessions were held at the new Martin Inn, recently completed by Pacific Mills at a cost of more than \$1,000,000. About 70 attended.

C. W. E. Locke, resident manager of Pacific Mills, welcomed the visitors. Principal banquet speaker was Leander Manley, secretary-manager of the Pacific coast branch of the association.

Technical papers of an unusually high standard were presented, the major contributors being A. M. Van Allen, Powell River Co., with a description of a whole log chipper at Powell River; Roy Ferguson, Pacific Mills, who spoke on recent developments in zinc hydrosulfite bleaching of groundwood; John Evans, who reviewed the modernization program at Port Mellon; W. Holloway, Pacific Mills, whose paper was on the role of the industrial engineer in the industry; and J. W. Fraser, of the B. C. Pulp & Paper Co.'s technical staff at Port Alice, who dealt with the salvage of logging left-overs.

There were also concurrent group discussions on groundwood, led by Howard B. Urquhart, Powell River Co.; on sulfite, led by Harold McBean, B. C. Pulp & Paper Co.; on kraft, led by Tommy Syme, Pacific Mills.

Harvey Carruthers presented a paper on ways and means of reducing pulp mill pumping costs.

New Bleaching System

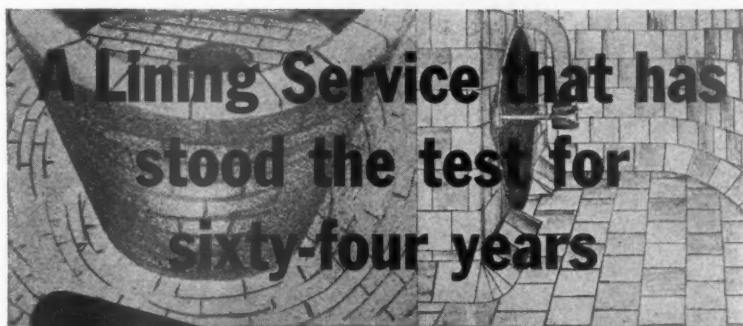
Mr. Ferguson, groundwood superintendent at Ocean Falls, told about the new system for bleaching groundwood and mentioned some of the contemplated improvements at the Pacific Mills plant. Standard brightness of newsprint, together with some savings in white water fiber losses, were given as the major result of the installation of the new process.

At present, said Mr. Ferguson, the zinc hydrosulfite solution in use at Ocean Falls is made up in 200 gallon batches in a water-cooled stainless steel reaction tank. One hundred and eighty pounds of zinc dust is added to cold water and kept agitated, while sulphur dioxide, purchased in liquid form and stored in ton cylinders, is bubbled through. When the temperature rises above 85 degrees F., sulfur dioxide addition is stopped until the solu-



LEADERS AT CANADIAN PULP & PAPER MEET—Top row, l. to r.: HENRY OSTROWSKI, Technical Control Supervisor, Pacific Mills, Ltd., new Chairman; JOHN GUTHRIE, B. C. Pulp & Paper Co., new Vice Chairman; JOHN EVANS, Sorg Pulp Co., Secretary-Treasurer; LEANDER MANLEY, principal banquet speaker, Secretary-Manager, Pacific Coast branch of the Ass'n; ROY FERGUSON, Pacific Mills, speaker.

Bottom row, l. to r.: TOMMY SYME, technical staff, Pacific Mills, discussion leader; HOWARD URQUHART, Asst. to Technical Director, Powell River Co., discussion leader; HAROLD McBEAN, Asst. Sulfite Supt., B. C. Pulp & Paper Co., discussion leader; F. L. ERLER, Supt., Westminster Paper Co., WILLIAM HERZIG, Crown Zellerbach Corp., San Francisco.



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tion cools to 60 degrees, when it is again turned on. The end point is reached when the pH reaches 4.0-4.2 and the specific gravity is between 1.19-1.21.

After allowing the excess zinc, which is necessary for optimum conversion, to settle, the relatively clear solution is decanted and stored ready for use under a layer of clear mineral oil, which prevents deterioration due to oxidation by contact with air. A continuous method of manufacturing zinc hydrosulfite is contemplated.

Design of Bleach Plant

In the design and installation of the new bleaching system advantage was taken of the experience gained by other coast mills using similar systems. The main feature which was lacking in the previous system was the installation of circulating retention chests and washers which remove the residual corrosive acids through the system. There are 21 three-spoke grinders at Ocean Falls operating at an average of 4 per cent pit consistency and 175 degrees F temperature. The stock is diluted to 2.5 per cent in the stock ditches and flows through the grizzlies. Inclined wooden flumes constructed lengthwise in the bull chests carry the stock to the bull screens. Fitted in U-shaped area around the flumes are the three retention chambers. A common header connects the accepted stock ports from the three bull screens. Stock from the header is pumped back to the retention chambers where the zinc hydrosulfite solution is added at the suction side of the pump. By this means intimate mixing is assured. These chambers provide 14 minutes retention at 2.25% consistency. Temperature of the stock averages 135 degrees F. From the retention chambers the stock is pumped to the washers.

The two 8 x 16 Oliver washers use paper

mill white water to was the pulp. Stock enters the vats at 2.25 per cent and is discharged at 8 per cent to the washed stock chest, where it is diluted with decker white water at 2 per cent and pumped to the knotters. A white water pump connected to the stock pipe line further reduces the consistency to 0.8 per cent at the knotters.

From the knotters the stock follows the normal sequence through the screening system to the decker chest.

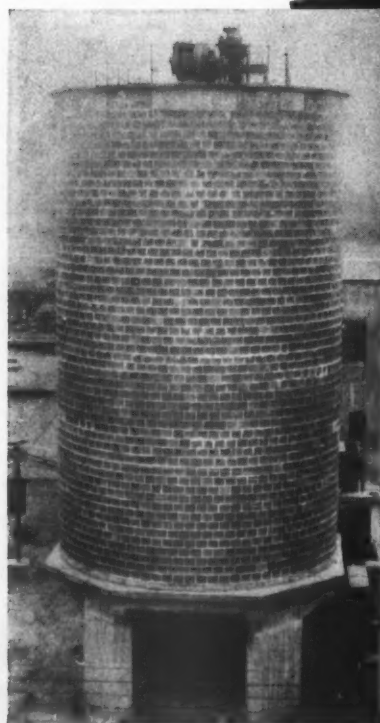
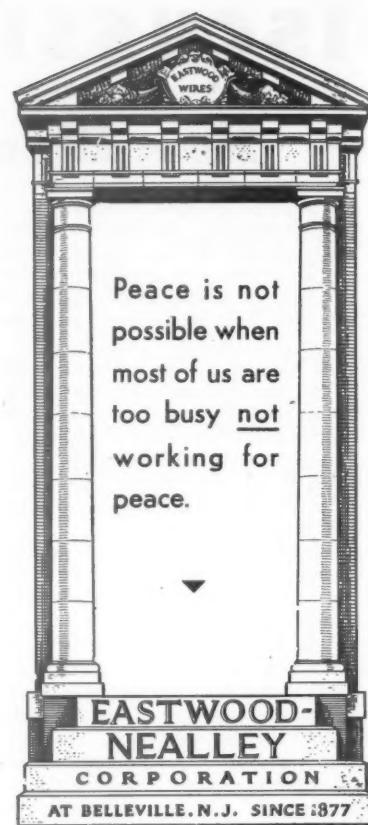
The washers are equipped with barometric legs having an effective length of 22 feet. Clear and cloudy affluent from the washers is collected in seal boxes below the washers. Warm effluent at 120 degrees F is mixed with decker white water at 70 degrees in the proportions required to maintain a stone shower temperature of 110 degrees. By this method the corrosive residual is retained in that section of the mill from the grinders to the washers.

In his paper on the Powell River Co.'s 123-in. whole log chipper, which was installed by Waterous Ltd., Brantford, Ont., Mr. Van Allen said that the combination of hydraulic barking and whole log chipping had resulted in a wood saving of 14 to 15% compared with the former equipment.

Salvage of logging waste is a costly business unless and until proper equipment is developed for the purpose, according to Joseph W. Fraser, who told of B. C. Pulp & Paper Co.'s experiment in utilizing forest debris at the old Spry Camp during the war years.

Highlighting recent improvements at Sorg Pulp Co.'s kraft mill at Port Mellon, Mr. Evans referred particularly to the Dunbar chipper, the Nyman Swenson washing system and the Combustion Engineering Co.'s recovery unit.

Discussing how the industrial engineer may play an effective role in the pulp and paper industry, Mr. Holloway said that the answer lay in three special attributes which the industrial engineer claimed to have—a specific attitude, a definite method and the necessary time in which to investigate a problem.



CHIP STORAGE TANKS

Another use for KALAMAZOO Glazed Tile

Kalamazoo felt quite fortunate in being able to participate in the erection of the new Hudson Pulp & Paper Mill of Palatka, Florida. This 46x27-ft. tank was built entirely of Kalamazoo blocks providing storage for chips which are conveyed direct from the chipper by a Redler type conveyor.

Kalamazoo erects many storage tanks for clay, ashes, fuel and other bulk materials in addition to numerous other types of tanks and chests for handling paper mill stock. This type of construction is NO higher in cost.

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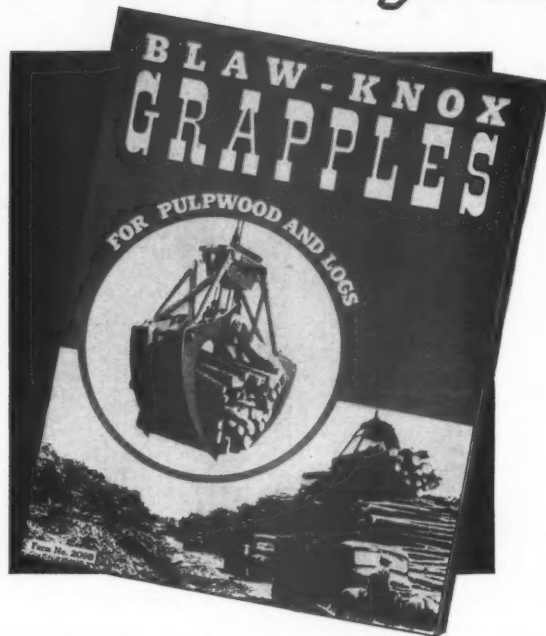
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Co-Operative Laboratory Folder Is Available

An attractive folder just off the press illustrates and describes The Fiber-Products Laboratory located in Springfield, O., sponsored by six co-operating companies, and equipped with machinery of commercial size to perform the operations of chipping, cooking, refining, sheet forming, and drying.

Facilities are available to manufacturers of groundwood, chemical pulps, semi-chemical pulps, paper, fiber board, wall board, hard board, and kindred products. The sponsors, The Bauer Bros. Company, Works Co., Akron, Ohio; Coe Manufacturing Co., Painesville, Ohio; Downingtown Manufacturing Co., Downingtown, Pa.; Oliver United Filters, Inc., New York, N. Y.; United States Wallboard Machinery Co., 90 Broad St., New York, N. Y., will supply copies of the informative folder on request.

New Nalco Ion Exchange Materials Booklet

National Aluminate Corp., 6220 W. 66th Place, Chicago 38, announces availability of a new booklet on ion exchange principles, properties and uses; and technical data on materials.

Tractor Films Available For Industry Meetings

How management is finding new economical applications of modern materials handling machines is shown in a series of films by the Industrial Truck Division, Clark Equipment Co., manufacturers of fork lift trucks and towing tractors. These films, 16 mm. with sound, are available on a loan basis on request to Industrial Truck Division, Clark Equipment Co., Battle Creek, Mich.

Forest Products Research Proceedings Available

Volume I of the Proceedings of the Forest Products Research Society, 340 pages, bound in green cloth with gold lettering, incorporating papers (with discussion) of the society meeting in Chicago Oct. 31-Nov. 1, 1947, directories of membership and other features, is for sale at \$6.00 per copy. Orders should be addressed to Thomas R. C. Wilson, Forest Products Research Society, P. O. Box 2010, University Station, Madison 5, Wis.

New E. D. Jones Jordans Filling Bulletins

New bulletins, EDJ-1009 and EDJ-1015, featuring the Jones Double Wedge Greylock Jordan Shell Filling, Jones Patented NOWAVE Plug and Shell Filling and new Jones Type-W Jordan Plug are available upon request to E. D. Jones & Sons Co., Pittsfield, Mass. These bulletins describe the constructional features of the products mentioned and also instruction for installing and refilling.

One of Biggest Boilers

Installation of one of the biggest boiler plants in the industry is currently under way at Pacific Mills, Ltd., in Ocean Falls, B. C.

The boiler, standing 80 feet high, is a Babcock-Wilcox & Goldie McCullough unit rated at 175,000 pounds an hour, with a possible capacity as high as 200,000 pounds. It is designed for burning pulverized coal, although for the present the company will use oil entirely.

Ross Engineering System

One of the latest installations of the Ross-Grewin ari-processing system is going into the Container Corp. of America plant at Los Angeles, on the No. 4 machine, making corrugated board.